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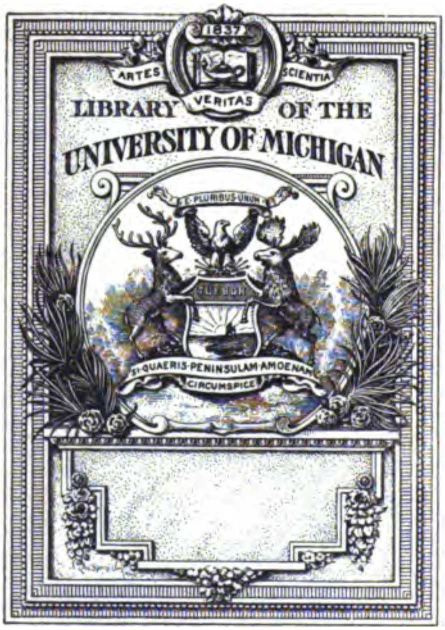
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THE

NORTH AMERICAN

MEDICAL AND SURGICAL

JOURNAL.

CONDUCTED BY

HUGH L. HODGE, M. D. | CHAS. D. MEIGS, M. D.
FRANKLIN BACHE, M. D. | B. H. COATES, M. D.
AND
R. LA ROCHE, M. D.

NON DOCTIOR, SED MELIORE IMBUTUS DOCTRINA.

VOL. III.

PHILADELPHIA:
PUBLISHED BY J. DOBSON, AGENT.
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1827.

Eastern District of Pennsylvania, to wit:

BE IT REMEMBERED, that on the 31st day of March, in the 51st year of the Independence of the United States of America, A. D. 1827, Hugh L. Hodge, Franklin Bache, Charles D. Meigs, Benjamin H. Coates, and René La Roche, of the said District, have deposited in this office the Title of a Book, the right whereof they claim as Proprietors, in the words following, to wit:

"*The North American Medical and Surgical Journal. Conducted by Hugh L. Hodge, M. D., Franklin Bache, M. D., Chas. D. Meigs, M. D., B. H. Coates, M. D., and R. La Roche, M. D. Non doctior, sed meliore imbutus doctrina. Vol. III.*"

In conformity to the act of Congress of the United States, entitled, "An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentioned;"—and also to the act, entitled, "An act supplementary to an act, entitled, "An act for the encouragement of learning, by securing the copies of maps, charts, and books, to the authors and proprietors of such copies, during the times therein mentiond," and extending the benefits thereof to the arts of designing, engraving, and etching historical and other prints."

D. CALDWELL, Clerk of the Eastern District of
Pennsylvania.

CONTENTS

OF VOLUME III.

No. 5.

ORIGINAL COMMUNICATIONS.

ART. PAGE.

I. Inflammation of the Mucous Membrane of the Stomach, in Yellow and Bilious Fevers. By William R. Waring, M. D., of Savannah. - - - - - - - - - - - 1

II. Account of a child who took Stramonium. By Charles D. Meigs, M. D. - - - - - - - - - - 33

III. Observations on the use of Balsam Copaiba, in Chronic Inflammation of the Mucous Membrane of the Lungs. By R. La Roche, M. D. - - - - - - - - - - 34

IV. On Infantile Convulsions, arising from Spasms of the Intestines. By Joseph Parrish, M. D., &c. - - - - - 51

V. Cases of Fevers, illustrative of the benefit to be derived from Leeches to the Epigastrium, and from Demulcents. By Caspar Morris, M. D., &c. - - - - - - - 61

VI. Case of Partial Paralysis, produced by extracting a Tooth. By Edward Pickett, M. D., &c. - - - - - - 68

ANALYTICAL REVIEWS.

VII. An Inquiry concerning that Disturbed State of the Vital Functions, commonly called Constitutional Irritation. By Benjamin Travers, F. R. S., &c. - - - - - - - 72

VIII. Practical Observations on the Convulsions of Infants. By John North, &c. - - - - - - - - - - 98

MEDICAL LITERATURE.

IX. Retrospective Review. Elementa Physiologiæ Corporis Humani. Auct. A. von Haller. - - - - - - - 133

X. Biographical Notice. Memoir of Dr. Samuel Powel Griffitts. By Governeur Emerson, M. D. - - - - - - 151

BIBLIOGRAPHICAL NOTICES.

XI. Observations upon the Autumnal Fevers of Savannah. By W. C. Daniell, M. D., &c. - - - - - - - 164

XII. A Practical Treatise on Diabetes; with Observations on the Tabes Diuretica, especially as it occurs in Children. By Robert Venables, M. B., &c. - - - - - - 167

XIII. Report of the trial of an action, Charles Lowell vs. John Faxon and Micajah Hawks, for malpractice in the capacity of Physicians and Surgeons, at Machias, Maine.

A letter to the Hon. Isaac Parker, Chief Justice of the Supreme Court of Massachusetts, containing Remarks on the Dislocation of the Hip Joint: occasioned by the Publication of a Trial, &c. By John C. Warren, M. D., &c. &c. - - 169

XIV. An Analysis of Fever. By Charles Caldwell, M. D., &c. 171
XV. Medical and Physical Memoirs. By Charles Caldwell, M. D., &c. 172

QUARTERLY SUMMARY OF MEDICAL AND SURGICAL INTELLIGENCE.

Anatomy, 174
1, Dr. Ellis's Anencephalos. 2, Connection of the Sympathetic Nerve with the Seventh Pair. 3, Serosity of the Spinal Canal. 4, Lobes of the Brain of Animals. 5, Real Hermaphrodite Ape.

Physiology, 177
6, Section of the Thorax on the Venous Blood. 7, Absorption. 8, Phrenology. 9, Terminations of Nervous Fibres. 10, Fibres of the Veins.

Pathology, 179
11, Vaccination of Animals. 12, Varioloid in Milan. 13, Small Pox in Paris. 14, Exanthematous Ophthalmia. 15, Diphtheritis—Angina Maligna and Croup. 16, Mr. King's Cases at the New York Prison. 17, Expulsion of a Pin.

Practice of Medicine, Therapeutics, and Materia Medica, 183
18, Vaccination. 19, Medical Profession in London and in Paris. 20, Affection of the Pancreas. 21, Bilious Dysentery. 22, Compression in Erysipelas. 23, Letter from Italy. 24, Epilepsy. 25, Treatment of Exanthematous Ophthalmia. 26, Treatment of Croup and Angina Maligna. 27, Endermic Medication. 28, Epilepsy cured by Tartar Emetic Ointment. 29, Cyanogenated and Stupifying Baths, and Purgative Syrup. 30, Aloes in Hæmorrhoids. 31, Tartar Emetic in Salivation. 32, Lunar Caustic in Zona. 33, Scruple Doses of Calomel, in Syphilis. 34, European Opium. 35, Madar.

Surgery, 197
36, Non-Mercurial Practice in Syphilis. 37, Amputation of the Lower Jaw. 38, Popliteal Aneurism. 39, Excision of the Ribs and their Cartilages. 40, Removal of the Astragalus. 41, Staphyloraphe. 42, Double Inguinal Hernia. 43, Wound of the Carotid Artery. 44, Amputation of the Cervix Uteri. 45, Excision of Cancer of the Rectum. 46, Calculus in Females.

Midwifery, 203
47, Fatal Placental Presentation. 48, Prolapsus Uteri. 49, Graviditas Interstitialis. 50, Pregnancy terminating by an Artificial Anus at the Umbilicus.

Chemistry and Pharmacy, 205
51, Bromine, a new Elementary Substance. 52, New Mines of Platinum. 53, Septometer. 54, Preparation of Bichloride of Lime. 55, Preservation of Dead Bodies. 56, Analysis of a Black Cancerous Vomit. 57, Analysis of a liquid from the Gall-Bladder. 58, Yellow Colour of Icterus Infantum. 59, Analysis of Briomy Root. 60, Chemical Nature of Arrow Root, Sago, &c. 61, Acetate of Mercury. 62, Mercurial Ointment. 63, Parisian Poppy.

Medical Jurisprudence, 209
64, Duration of Human Pregnancy. 65, Infanticide. 66, Arsenic.

Quarterly List of New Medical Publications 211

No. 6.

ORIGINAL COMMUNICATIONS.

ART. PAGE.
I. An account of the Medical Topography, and of the Endemic in 1824, of Thompson's Island, or Key-West. By B. Ticknor, M. D. United States Navy. - - - - 213
II. Staphyloraphe or Palate-Suture, successfully performed. By A. H. Stevens, M. D. Professor of Surgery, New York. - 233
III. An Essay on Hæmorrhages. By D. Francis Condie, M. D. - 236
IV. Effects of Atmospheric Air, of Oxygen and Nitrogen, on Exposed Cavities. By J. Knox Finley, Ohio. - - - 260
V. Remarks upon the Mischievous Effects on Society of Spirituous Liquors, and on the means of preventing them. By Samuel Emlen, M. D. a Physician to the Pennsylvania Hospital. - 267
VI. Case of Recovery from Narcotic effects of Opium, by means of Artificial Respiration. By Hugh Ogilvie, M. D. of Georgia. 277
VII. On the Treatment of Anchylosis, by the Formation of Artificial Joints. A new operation devised and executed by J. Rhea Barton, M. D. one of the Surgeons to the Pennsylvania Hospital, (with a plate.) - - - - - - - 279

ANALYTICAL REVIEWS.

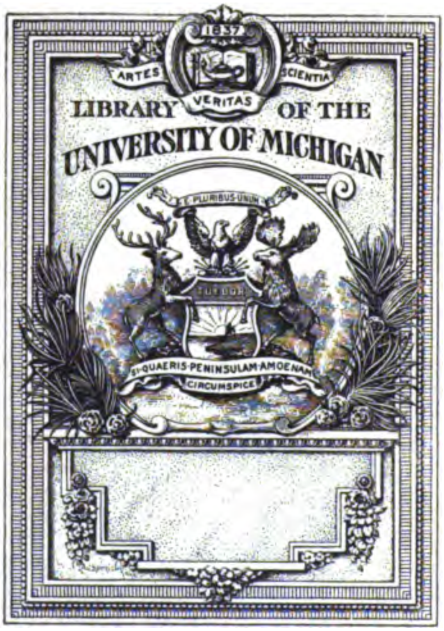
VIII. A Treatise on the Diseases of Females. By Wm. P. Dewees, M. D. Adjunct Professor of Midwifery in the University of Pennsylvania, &c. &c. Carey & Lea, 1826. - - - 293
IX. A Treatise on Physiology, applied to Pathology. By F. J. V. Broussais, M. D. &c. &c. translated from the French, by John Bell, M. D. &c. and R. La Roche, M. D. &c. Carey & Lea, 1826. - - - - - - - - - - - 320

MEDICAL LITERATURE.

X. Retrospective Review. Traité des Fièvres Malignes; des Fièvres Pestilentielles et Autres. Avec des Consultations sur plusieurs sortes des Maladies. 2 vol. 12mo. Paris, 1742. Par Chirac. - - - - - - - - - - 342

BIBLIOGRAPHICAL NOTICES.

XI. An Essay on Morbid Sensibility of the Stomach and Bowels, as the proximate cause or characteristic condition of Indigestion, Nervous Debility, Mental Despondency, Hypochondriasis, &c. &c. To which are prefixed, Observations on the Diseases and Regimen of Invalids on their return from hot and unhealthy climates. By James Johnson, M. D. of the Royal College of Physicians, &c. Reprinted Philadelphia, 1827. 12mo. pp. 154. - - - - - - - - 358
XII. An Oration delivered before the Philadelphia Medical Society, pursuant to appointment, by R. La Roche, M. D. Member of the American Philosophical Society, &c. February 3, 1827. Published by the Society. - - - - - - 361
XIII. Observations on the Efficacy of White Mustard-Seed, in Affections of the Liver, Internal Organs and Nervous System, and on the General Management of health and life. By Charles Turner Cooke, Consulting and Operating Surgeon, at Cheltenham, 3d edition. Gloucester, 1826, pp. 120, 8vo. - 365
XIV. An Elementary System of Physiology. By John Bostock, M. D. vol. 2nd, London, 1826, 8vo. pp. 143. - - - - 368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The Editors of this Journal feel themselves called upon to express their gratitude, for the very liberal and favourable feeling which has been expressed towards them, by several contemporaneous periodicals. Their thanks are particularly due, in this country, to the Philadelphia Journal of the Medical and Physical Sciences; in Canada, to the Quebec Medical Journal; and in France, to the Révue Encyclopédique. The liberality of the conductors of these works has led them to expressions of commendation, which, while we feel them to be far beyond our desserts, are warmly treasured by us, as incitements to future exertion. Others have paid us the higher compliment of copying a more or less considerable portion of our reviews or of the Quarterly Summary; especially when the articles extracted contained American information. We are highly gratified to find the Journal thus serving to diffuse a knowledge of the useful contributions made to its pages, through a wider sphere than its original circulation.

We conceive ourselves entitled to mention, as an encouragement to those friends who have favoured us with communications, that a considerable proportion of the latter have been copied or analysed by foreign journals of large circulation. Among these, besides mere notices, and with the further exception of papers furnished by the Editors, we may particularly enumerate Dr. A. G. Smith's account of the Extirpation of an Ovarium, and the papers by Dr. Trenor, on Neuralgia; by Dr Shoemaker, on cases of Poisoning from eating Pheasants; by Dr. Huntt, on the Influence of Change of Climate in Consumption; by Dr. Wood, on the use of Oil of Turpentine in Fevers; and by Dr. Hunter Ewing, also on Neuralgia; all occurring in our three first numbers.

The numerous exchanges which have been negociated with foreign journals, render this publication a means of disseminating its contents over a very extended surface, both in England, and on the European continent.

CONTENTS

OF NO. 5.

ORIGINAL COMMUNICATIONS.

ART. PAGE.

I. Inflammation of the Mucous Membrane of the Stomach, in Yellow and Bilious Fevers. By William R. Waring, M. D., of Savannah. - - - - - - - - - - - - 1

II. Account of a child who took Stramonium. By Charles D. Meigs, M. D. - - - - - - - - - - 33

III. Observations on the use of Balsam Copaiba, in Chronic Inflammation of the Mucous Membrane of the Lungs. By R. La Roche, M. D. - - - - - - - - 34

IV. On Infantile Convulsions, arising from Spasm of the Intestines. By Joseph Parrish, M. D., &c. - - - 51

V. Cases of Fevers, illustrative of the benefit to be derived from Leeches to the Epigastrium, and from Demulcents. By Caspar Morris, M. D., &c. - - - - - - - 61

VI. Case of Partial Paralysis produced by extracting a Tooth. By Edward Pickett, M. D., &c. - - - - - - 68

ANALYTICAL REVIEWS.

VII. An Inquiry concerning that Disturbed State of the Vital Functions, commonly called Constitutional Irritation. By Benjamin Travers, F. R. S., &c. - - - - - - - 72

VIII. Practical Observations on the Convulsions of Infants. By John North, &c. - - - - - - - - - 98

MEDICAL LITERATURE.

IX. Retrospective Review. Elementa Physiologiæ Corporis Humani. Auct. A. von Haller. - - - - - - 133

X. Biographical Notice. Memoir of Dr. Samuel Powel Griffitts. By Governeur Emerson, M. D. - - - - - - 151

BIBLIOGRAPHICAL NOTICES.

XI. Observations upon the Autumnal Fevers of Savannah. By W. C. Daniell, M. D., &c. - - - - - - - 164

XII. A Practical Treatise on Diabetes; with Observations on the Tabes Diuretica, especially as it occurs in children. By Robert Venables, M. B. &c. - - - - - - 167

XIII. Report of the trial of an action, Charles Lowell vs. John Faxon and Micajah Hawks, for malpractice in the capacity of Physicians and Surgeons, at Machias, Maine.
A letter to the Hon. Isaac Parker, Chief Justice of the Supreme Court of Massachusetts, containing Remarks on the Dislocation of the Hip Joint: occasioned by the Publication of a Trial, &c. By John C. Warren, M. D., &c. &c. - 169

XIV. An Analysis of Fever. By Charles Caldwell, M. D., &c. - 171

XV. Medical and Physical Memoirs. By Charles Caldwell, M. D., &c. - - - - - - - - - - - - - 172

QUARTERLY SUMMARY OF IMPROVEMENTS IN MEDICINE AND SURGERY.

Anatomy, - - - - - - - - - - - - - 174

1, Dr. Ellis's Anencephalus. 2, Connection of the Sympathetic Nerve with the Seventh Pair. 3, Serosity of the Spinal Canal. 4, Lobes of the Brain of Animals. 5, Real Hermaphrodite Ape.

Physiology, - - - - - - - - - - - - - 177

6, Section of the Thorax on the Venous Blood. 7, Absorption. 8, Phrenology. 9, Terminations of Nervous Fibres. 10, Fibres of the Veins.

Pathology, - - - - - - - - - - - - - 179

11, Vaccination of Animals. 12, Varioloid in Milan. 13, Small Pox in Paris. 14 Exanthematous Ophthalmia. 15, Diphtheritis—Angina Maligna and Croup. 16, Mr. King's Cases at the New York Prison. 17, Expulsion of a Pin.

Practice of Medicine, Therapeutics, and Materia Medica, 183

18, Vaccination. 19, Medical Profession in London and in Paris. 20, Affection of the Pancreas. 21, Bilious Dysentery. 22, Compression in Erysipelas. 23, Letter from Italy. 24, Epilepsy. 25, Treatment of Exanthematous Ophthalmia. 26, Treatment of Croup and Angina Maligna. 27, Endermic Medication. 28, Epilepsy cured by Tartar Emetic Ointment. 29, Cyanogenated and Stupifying Baths, and Purgative Syrup. 30, Aloes in Hæmorrhoids. 31, Tartar Emetic in Salivation. 32, Lunar Caustic in Zona. 33, Scruple Doses of Calomel in Syphilis. 34, European Opium. 35, Madar.

Surgery, - - - - - - - - - - - - - - 197

36, Non-Mercurial practice in Syphilis. 37, Amputation of the Lower Jaw. 38, Popliteal Aneurism. 39, Excision of the Ribs and their Cartilages. 40, Removal of the Astragalus. 41, Staphyloraphy. 42, Double Inguinal Hernia. 43, Wound of the Carotid Artery. 44, Amputation of the Cervix Uteri. 45, Excision of Cancer of the Rectum. 46, Calculus in Females.

Midwifery, - - - - - - - - - - - - - 203

47, Fatal Placental Presentation. 48, Prolapsus Uteri. 49, Graviditas Interstitialis. 50, Pregnancy terminating by an Artificial Anus at the Umbilicus.

Chemistry and Pharmacy, - - - - - - - - - 205

51, Bromine, a new Elementary Substance. 52, New Mines of Platinum. 53, Septometer. 54, Preparation of Bichloride of Lime. 55, Preservation of Dead Bodies. 56, Analysis of a Black Cancerous Vomit. 57, Analysis of a liquid from the Gall Bladder. 58, Yellow Colour of Icterus Infantum. 59, Analysis of Briomy Root. 60, Chemical Nature of Arrow-Root, Sago, &c. 61, Acetates of Mercury. 62, Mercurial Ointment. 63, Parisian Poppy.

Medical Jurisprudence, - - - - - - - - - 209

64, Duration of Human Pregnancy. 65, Infanticide. 66, Arsenic.

Quarterly List of New Medical Publications, - - - 211

THE

NORTH AMERICAN

Medical and Surgical Journal.

JANUARY, 1827.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*Inflammation of the Mucous Membrane of the Stomach, in Yellow and Bilious Fevers.* By WILLIAM R. WARING, M. D., of Savannah, Georgia.

A COMMUNICATION on the effects of vesicatories and rubefacients, by Dr. DANIEL, of Savannah, Georgia, was inserted in the Journal of Medical and Physical Sciences for 1823; in which my opinions concerning the inflammatory state of the stomach in the endemic of 1820, were objected to and combated. When this paper made its appearance, I happened to be out of the country; and although some time has elapsed since my return, accident has prevented me from seeing it, until within the last fortnight. This circumstance will account for the delay in replying to it, and in defending my opinions. The author observes that he exhibited a stomach to Dr. KOLLOCK in 1822, which he (Dr. K.) acknowledged to be similar to those which I had shown to him in 1820. He then proceeds to describe the appearances of such stomachs, by the following detail; and concludes, that they are not inflammatory, but the result of venous congestion.

1st. There are red spots more or less numerous upon the villous coat, and especially about the cardia and pylorus.

2nd. Dissecting away the villous and nervous coats, the veins external to the latter are found turgid with blood, and the arteries empty.

3d. The red spots are made up of distinct specks.

4th. Those specks are about the size of the point of a writing pen, and of irregular shape.

5th. Sometimes they are like the minute extremities of the veins, imperfectly injected with red matter.

6th. These specks are interspersed with black points.

7th. Dissecting the villous from the nervous coat, these red specks are still seen in the former.

8th. A dark bluish spot is occasionally found in the stomach, usually near the pyloric orifice, from half an inch to two inches in diameter, invariably covered with mucus approaching to the appearance of pus. In endeavouring to discover whether it was not sphacelated, he has torn the neighbouring parts, which yielded more readily than the coloured portion.

9th. He then infers that this is certainly not inflammation, but an imperfect congestion of the extreme capillary veins.

10th. As further proof that there is no inflammatory action, he adduces the condition of the liver, spleen, pancreas, brain, &c.; in which, he says, there is nothing inflammatory, because there is no exudation of coagulable lymph.

11th. He deduces an argument from the effects of remedies: bleeding, cathartics, &c. are unproductive of benefit; *Cayenne pepper*, serpentaria, and mustard, furnish relief.

12th. Yellow fever, he observes, is a loss of balance between the capillary circulation and the alimentary canal, and the rest of the sanguiferous system." "The causes operate upon the skin, and the effects are developed in the stomach." These effects are a diminution of tone in the capillaries of the surface of the body and of the stomach. The cure is to be brought about by sustaining the former, and invigorating the latter, for the purpose of equalizing the circulation.

After this exposition of the author's ideas, it must be evident without much commentary, that the deductions are by no means supported by the premises which he lays down. He finds a redness in the mucous membrane of the stomach, and attributes it to loss of tone in the veins of that membrane. It is not indeed stated, that the loss of tone is thus confined to veins exclusively, for the expression is indefinite; such, however, must be his meaning, since he adduces the emptiness of certain arteries, because of course they had not lost their tone, and the congestion of certain veins because of course such an effect had occurred in them. These arteries and veins which he cites, are situated on the outside of the sub-mucous coat, and possess considerable calibre. The blood is collected then, according to the author, in the veins of the mucous coat, in consequence of their inability to circulate it. This is the notorious doctrine of venous congestion, tinctured with Brownism, and located in the digestive organs. There are several objections to it, which I will state in order.

1. The redness which covers the mucous membrane is owing to the capillary network which is spread over it. The vessels of this network anastomose infinitely: the blood which it contains circulates in all directions. It is received from the arteries, and when it has performed its function, it is poured again into veins. The network itself is neither arterial nor venous. It is a part of the great capillary system. *Yet it is precisely here* that the author *has fixed his venous* congestion.

2. He says that the arteries external to the nervous coat were found empty and the veins filled. It is very common to look through the peritoneal coat, and to perceive the branches of arteries void, while the branches of veins are well injected with blood. And this is the natural post-mortuary state. It is quite extraordinary to find arteries full of blood after death. A celebrated ancient anatomist even founded his theory of inflammation upon a supposed error of blood by transfusion from veins into arteries. It was the inspection of the dead body no doubt, that formerly led to the notion, that veins alone carried blood, while the arteries conveyed spirits or were aerial tubes. But the arteries and veins alluded to in the present instance, belong to the general circulation, while the circulation of the mucous coat, or the circulation of the vessels in which the *author has seated his venous congestion* is capillary. So that even admitting a venous congestion to exist in those veins, it does not follow that it must be extended to the mucous coat. Pathological anatomists constantly warn us against suspecting a diseased state of this membrane by the aspect of blood vessels beneath it. So very distinct may be their operations, that nothing from the one can be positively concluded of the other. But it is obvious that there can

be no venous congestion where the venous tissue does not exist. The capillary tissue is not venous.

The theory of venous congestion is altogether unfounded. There is no physiological proof of the possibility of such a congestion independently of arterial influence. *The blood is supposed to stagnate in the veins, because these vessels become incapable of circulating it, as rapidly as it is poured into them from the arteries. Hence arises congestion. No reason however, is generally assigned for the peculiar incapability of those veins, in which it is located, and for the congestion occurring in one part in preference to another. There is general debility, it is said, and then venous congestion. The veins of the part upon which this congestion falls are found turgid with blood by the autopsic examination.* I confess that all this is beyond my comprehension. When the heart and arteries act strongly, the veins are distended and suffer congestion; but that is not the species of congestion which is here intended. When they act feebly the veins receive only a small quantity of blood, and of course cannot be distended. There is a mechanical congestion, indeed, which is produced under certain circumstances by obstruction at the right side of the heart: but this is not indicated as venous congestion. The latter is a vital effect, according to those who advocate it. Now the veins are void of irritability; they have no contractile power such as the heart exerts; they exercise very little active agency in the circulation of the blood. If the finger be pressed upon a superficial vein, the blood will not move towards the heart; it will stagnate. There seems to be a slight elasticity in the veins, they are pressed by surrounding parts, they have the support of the capillary vessels and of the contractions of the heart and arteries; and these are the means by which they conduct the blood. Atony then can hardly be said to be applicable to them; and when they are found to be congested, it cannot be attributed to the operation of that cause. I repeat again, that it is but by a mechanical, local cause, that venous congestion can take place in a part during life. Congestions of the character indicated, that are discovered after death, are probably the results of the manner of dying, and of gravitation through anastomosing vessels. I think I might say that in ninety-nine cases out of a hundred they are the effects of these causes. But let us suppose that the blood became checked in the veins alone of an organ; let us suppose it to be retarded in its progress, and to be accumulated in unusual quantity in those veins. The effect could not be so serious as that which occurs in yellow fever. It is extremely difficult to excite a morbid action in the common coat of a vein, and when you do excite it, it is an irritation. Alkalies, acids, and mechanical instruments may be introduced into it, without sensible consequences. Suppose again that congestion be established in the veins; the capillary circulation is impeded, the arteries continue to drive more blood into the capillary vessels, and they are distended, irritated, and inflamed. If such an obstruction be set up suddenly, the heart becomes irritated and fever is produced. But if it be set up slowly, as in certain organic affections, no fever is produced, and even the local disease does not occur. But it is obvious that a capillary congestion of this kind is strictly inflammatory, and of course totally different from the congestive state which is under consideration. Let us go still farther. Suppose the capillary vessels of the mucous coat of the stomach to sustain an atony or debility, what is the physiological consequence? It is this; they will circulate less blood, and will not suffer a congestion. Establish an atony in the capillary network that is contained in and spread over the skin. Does not the blood immediately recede from it? So far from attracting more blood or becoming congested, it does not admit even the usual quantity. The cause is, that the capillary vessels circulate their own blood chiefly, and when they refuse to circulate their due share, it is otherwise distributed by the arteries. Again, if subsequent to death the mucous membrane be found in a gorged state, and having the colour of venous blood, it does not follow, that it must be the effect of venous congestion; the dark appearance is perfectly inflammatory. For proof of this, I refer to ORFILA on poisons, and to surgical writers in general. At the same time I willingly acknowledge, that such a state does not in itself precisely indicate a pre-existing irritation. It is ground sufficient, however, to induce us to suspect it. If the vena portæ be clogged, if the liver be gorged, if the vessels of the omentum be much injected, if there be some obvious obstruction, either permanent, or accidental and temporary, if in the article of death the circulation of the blood continue after respiration has ceased, then that suspicion would be weakened, and only weakened. But if those conditions do not exist, then the suspicion, so far from being weakened, is greatly strengthened. Now I have many times seen the veins of the portal system otherwise than clogged, while the mucous coat was in a state of engorgement, during the prevalence of yellow fever. I have seen the liver repeatedly even void of its proper quantity of blood, being dry and pale. This observation is not peculiar to myself. The doctrine of venous congestion then appears to be untenable generally. How it should have got vogue as it has done recently in England, is very singular. The *congestive state* of typhus fever is now become a fashionable denomination for a grade of that disease. Some of the Continental pathologists entertain faith in a species of passive congestion, which is infinitely more reasonable and scientific. It is an affection of the capillary vessels, not venous nor arterial, but of the capillary vessels as belonging to one system. But even this as a proximate cause of fever I consider as altogether visionary. The idea is founded upon the dark coloured congestions which I have alluded to above, and the low state of fever which precedes death in such cases. These are certainly very inadequate evidence of passive accumulation; but as it is not my intention to go farther into this subject, I will cease to discuss it.

3. The causes of yellow fever, observes Dr. D., first paralyze the skin and then the vessels of the mucous membrane, by the association which exists between them. This is not the common effect of debilitating the capillaries of the skin. There is indeed a strong sympathy between the internal and external surfaces. But it is understood that they antagonize each other; that when the one is less excited, the other is apt to be more excited. Witness the effects of cold upon the serous and mucous membranes on the one hand, and the effects of blistering over an inflamed cavity on the other. Chilling the skin brings on pleurisy, and vesicating the skin cures it. Many cutaneous eruptions are suppressed by accident or maltreatment, and fall on the bowels; the warm bath and external irritation restores and re-establishes them. The erysipelatous affections of children, the phlegmons and ulcers that appear upon their heads, necks, and bodies, are frequently accounted beneficial, because they preserve from diar-

rhœas and dropsies. A paralyzing impression then, made upon the external surface, so far from being propagated to the mucous membrane of the stomach, ought to increase the action of its vessels, or excite them to the inflammatory state. It could not produce in them a passive congestion, nor a venous congestion, even if the venous tissue were ascertained to exist in them.

4. It is observed that yellow fever depends on "loss of balance between the capillary circulation and the alimentary canal, and the rest of the sanguiferous system." I copy this phrase verbatim, for it is evidently inexact, and I am fearful that I may not comprehend it justly. The author surely cannot mean the mechanical falling of the fluids of all kinds from the capillary system on the one hand, into the general circulation on the other. He does not mean, assuredly, that all the capillaries are included in this operation. Some carry white fluids, others carry red, and they are distributed to all parts of the living body. They are internal *as well* as external. And yet, is it intended to make distinctions between the capillary circulation, and that of the alimentary canal! If the author mean that debility takes place in the capillaries of the skin and the alimentary canal, which is probable from what he says of their atonic state, in another place, then in consequence of that debility, the balance of the circulation is lost. There is consequently less circulation in the capillaries of those surfaces and more in the rest of the blood vessels. While there is decreased action in the former, there is preternatural excitement in the latter. While the former contain less than their natural quantity of blood, the latter contain more. But does not such a loss of balance, and such a distribution of the blood, invalidate the idea of congestion in the mucous membrane? If the blood is to abandon the small vessels in order that it may be accumulated in the great arteries and veins, why is it found, agreeably to the statement of Dr. D., congested in the minute vessels of the stomach? Conformably to the loss of balance, those vessels should be empty. The blood ought to have deserted them and retreated into the great reservoirs toward the heart. Why too is it not found as well congested in the minute vessels of the skin? Why do we not see a passive congestion as frequently under the epidermis? Since the causes of the loss of balance are asserted to operate there in the first place, and are not asserted to annihi-

late *their tone* less than that of the vessels of the mucous membrane, it is obvious that the one being "paralyzed" as much as the others, the loss of balance affecting both in the same way, they ought to be equally subject to the appearances of a passive state. Nevertheless I am satisfied, that I have not in all my professional observations, seen half a dozen petechial cases of yellow fever. But why again, should debility in the extreme vessels produce venous-congestion particularly? For even allowing it to be true, that those vessels are divided into venous and arterial tissues, there is no reason assigned, or that I can perceive, why one species of them should suffer congestion exclusively, while the debility is common to both.

5. It is remarkable, since loss of tone and consequent loss of balance affecting the capillary system at large are assigned as causes of venous congestion in the mucous coat of the stomach, that this coat should be the uniform seat of such congestion and other kinds of structure so seldom, where the capillary or extreme vessels equally abound. If the blood is merely to accumulate in the general circulatory system from weakness in the capillary vessels universally, is it not extraordinary that the effect of that weakness does not equally appear in the serous membranes, in the muscular tissue, in the spleen, &c. &c. These parts, however, are comparatively exempt; and when they are affected, it seems to be in a secondary manner. The mucous membranes are always the focus of the sanguineous accumulations. I have dissected a great number of the victims to yellow and intense bilious fevers, more, unquestionably, than any other individual in Savannah, and I have met with very few instances, in which these membranes were not morbidly altered in a greater or less degree by capillary congestion. After black vomit, the alteration of that portion of them which lines the stomach, may be said to be constant; for although there are some rare exceptions, in which it is not discovered by the post mortem inspection, the appearances are such, in conjunction with the traits of the disease, that one could not doubt that it had existed.

6. In adducing the influence of remedies to sustain the doctrine of venous congestion, the author asserts, that stimulant substances relieve, while depletion and those of a contrary character do no good in yellow fever. If he mean to say that Cayenne pepper

will cure as well as relieve, in cases of this disease after the occurrence of black vomit, then the remedy is indeed invaluable. It is almost, if not universally believed by those of extended experience, that when that event supervenes, death is usually a consequence, and that the ordinary materia medica furnishes no resource. But if he mean the higher grades of bilious fever only, then I avow, that although I have gone through all the grades of endemic disease in Savannah since 1813, with the exceptions of 1822 and 1823, up to the present time, I have never seen a single example, where the morbid impression was intense, in which stimulant medicines did good in my hands. I have employed them repeatedly, and in cases too which tempted me by their insidious exterior; but never with advantage in a curative point of view. In the milder forms of fever which intermit or remit, the remissions almost abating to distinct apyrexies, and the paroxysms presenting no compound or alarming character, tonics, especially after the lapse of a few periods, are beneficial; and that practice is certainly not new. It is inculcated in many books, and it has been for a long time the domestic manner of treating the autumnal fevers of the Atlantic sea-board in the southern states. It is the practice of the natives upon themselves. Being in some degree acclimated, their diseases are never accompanied by great irritability, and generally admit of the administration of the Peruvian bark very early. But I believe, that even moderate remittents, may be frequently made to assume symptoms of great severity by its premature employment. This medicine however, is altogether different from stimulants. The more I have seen of its use, the more am I confirmed in the opinion, that the operation of the bark is far from being understood. It stimulates very little, and indeed sometimes it does not excite heat or increase the circulation. Occasionally it even reduces the pulse by overcoming a low degree of the morbid state. Many of the best French physicians of the present enlightened period, consider it as specific in certain grades of fever, as they consider mercury specific in syphilis. Many of the older English physicians considered it thus also. This is undoubtedly an exaggerated estimate, but it does not err half so much as that, which classes it broadly in the great catalogue of stimulants. The therapeutical branch of medicine has been too much generalized.

It is founded among us, upon the metaphysical physiology of JOHN BROWN; and is evidently erroneous. Materials are heaped together that have some points of similarity indeed, but so many of dissimilarity, at the same time, that their effects are absolutely different. Bark is entitled a stimulant, and in that way it becomes associated with volatile alkali, red pepper, &c. &c. to which it bears scarcely an iota of resemblance. It is called a tonic, and in that way ranks with the salts of iron; but there is no more likeness in their operations, than between an emetic and cathartic. And what is a tonic? A substance which gives tone. And what is tone? It is an old word which has been retained in use, although its mechanical meaning has been discarded long ago. We employ it now to signify strength, vigour, &c.; and tonic substances are those which impart strength and vigour, by a direct influence which is inexplicable. When a part is diseased, and a tonic restores it to health and vigour, it is by removing the disease. But what the nature of that process is precisely, it is impossible to say. It is not mere acceleration in the action of the heart or blood-vessels; for stimulants frequently increase the disease and diminish the strength, when tonics remove it and increase the strength. I would as soon then call the bark, or the quinine preparation of it, which is much better, a febrifuge. The term is not more occult than that of tonic, and expresses the effect just as clearly; and indeed much better, since it implies something peculiar, which is not understood, but which is specifically curative in certain cases. It has moreover the additional advantage of separating it from the list of acrimonious substances with which it is frequently associated in the materia medica of some physicians, being made to furnish in this way, by the benefit it produces, an authority for their use. I believe very often it is concluded, because the bark is found to be a successful medicine, that the stimulant practice generally is to be resorted to; and thus serpentaria, volatile alkali, Cayenne pepper, &c. insinuate themselves into the course of treatment. A very interesting paper has been recently published in the island of Martinique, by M. LEFORT, physician of the King of France, upon the yellow fever of 1825, at Fort Royal, as treated by venesection and the sulphate of quinine. The observations of this gentleman tend to confirm what I have said as to the specific operation of bark, and are worthy of attention in a practical view, by the medical men of our southern states. He says, that bleeding is useful in the first stage of the disease only; sulphate of quinine in the second. When the stomach appears to be entirely exempt from inflammatory action, and to be in a state of inertia and indolence in consequence of the previous irritation and pain of the first stage, this medicine has surpassed his expectations. He does not tell us, indeed, that it ever proved successful in a case of black vomit, though it did sometimes succeed where hematemesis existed. "*We have, says he, during six years tried a great number of stimulants (in these cases,) and the stomach has shown itself refractory to all without exception.*" "We have administered it in doses of two and a half to three grains every two or three hours, and it has retained it." "We save nearly two-thirds of our patients, (by these two remedies,) and we would save more, we venture to believe five-sixths, if they presented themselves in time." "Is it," says he, "as tonic, stimulant, revulsive, stupifiant, &c. &c. that the quinine produces its salutary effect? That effect is undeniable and certain, although it may be impossible to explain it." In speaking of the comparative advantages of this chemical preparation of the bark and the bark itself, he laments the obstinacy and blindness of those physicians who will persist in using the latter in preference to the former, notwithstanding it is well understood that it possesses its virtues without its inconveniences. "These happy results from the influence of the quinine, says he, disconcert a little some young physicians who desire to explain every thing." That is, such physicians as divide all the remedies they employ into two classes only, the stimulant and the sedative, and exclusively reject all effects except the increased or decreased activity of vessels. Such a division may be convenient to a certain degree, because the attainable object of remedies is generally nothing more than a modification of the obvious vital actions; nothing more than to actuate or to quiet. But as it must be admitted that in the diseased state there is not only alteration in the actions of the fibre, but some intimate unknown alteration in the fibre itself, of which that alteration of actions is but a consequence and an evidence, and not the essence of the disease, it follows of course that an agent may operate upon this unknown alteration in an inexplicable manner, so as to remove or aggravate the morbid injury. Before specific effects are discarded altogether and exclusively, it is necessary to show that the common evidences of morbid alteration, such as occur in irritation for example, are not mere symptoms, but the primitive morbid alteration itself; which could not be pretended. Almost all the medicines which we employ have something peculiar about them, and produce, beside increased or decreased action, some secret results. Why does the blistering fly influence the neck of the bladder and not the brain? Why should opium stimulate the brain and not the neck of the bladder? Why does antimonial tartar, thrown into a vein, produce vomiting and not stupor? Why do the causes of numerous diseases produce their peculiar diseases and not others? Why does not the cause of measles generate a small pox or a yellow fever? Such instances of specific action are infinite in pathology. There never could be any thing more extravagant, perhaps, than the ultra simplification of the materia medica into stimulant and sedative, which is generally adopted. It is contrary to innumerable facts. Before we can understand the profound effects of agents upon the living fibre, it is necessary to know much more of its nature than we do. We have no means of penetrating farther than the efforts which it makes. The character of the changes which take place beyond this point are inscrutable. For the same reason, however, that some agents are enabled to produce in it secret changes which are morbid, others may produce counter impressions and restore it to its original state of soundness. Hence it is preposterous to deny the possible existence of specifics. The number of such medicines known may indeed be very few; yet these few, nevertheless, certainly exist, although it may require prudence and attention to the state of the irritability, in order to administer them successfully. Thus M. Lefort cannot be deemed empirical, in sustaining the secret alterative influence of quinine in a peculiar grade of fever which he describes.

7. Since 1820 there has not been a single severe endemic in Savannah. Mild fevers have prevailed in summer and autumn, sometimes remittent, but generally intermittent. Circumstances of different kinds have moderated the causes of disease, and this latter has been ameliorated conformably to the force of the causes. We are all of us observers of the great revolution that has taken place in our climate, and the comparative salubrity which has re-

sulted from it. Experiments made under such circumstances, are doubtless very ill suited to test the character, or to institute a proper mode of treatment, of the malady which ravaged our city in the year 1820. Endemic and Epidemic diseases undergo various changes from year to year, both in degree and form; and demand, accordingly, variations in the method of managing them. They are like a common ulcer, which the intelligent surgeon finds it necessary to treat differently from day to day. He applies a caustic perhaps in the first instance, then a mineral acid, then a preparation of copper, and finally perhaps he covers it with a simple ointment of sweet oil and wax, agreeably to the numerous changes that it assumes. Each application is important in its right place, and it would be very bad logic indeed, to denounce any one of them because it did not fulfil the functions of all and prove useful at every stage. Thus it seems to me to be equally contrary to the rules of good reason to conclude, that because tonics are efficient in subduing the moderate intermittent and remittent fevers which have prevailed of late years, they are consequently well adapted to the treatment of the pestilential diseases which preceded them. The cases are as dissimilar as they can well be imagined to be.

8. If the author allude in his remarks on the effects of remedies, to the higher grades of bilious fever, as well as to that grade which is admitted on all hands to be yellow fever, then I have no hesitation in asserting, that the only great means of overcoming them, consists in the various means of depletion and revulsion, according to the various states in which it appears. It is not expedient that I should enter into a reasoned detail, to demonstrate this truth. It accords with the experience of a vast majority of the intelligent physicians of this country, and amounts to established fact. During the last war I held a commission in the army of the United States, which furnished me with ample opportunities for observation in the fevers produced by marsh exhalations; since that period, an extensive private practice in fever of the same character, has afforded me additional opportunities of information, and I have no doubt whatever in relation to it. I have quartered in a hospital of soldiers labouring under all the numerous forms and degrees of fever; not a dose of medicine has been prescribed, in important cases, which I did not see ad-

ministered, so that the evacuant and sedative experiment has been complete. Placed in such a field, where no limits are set up to the will of the physician, and where the violence of disease unceasingly urges to right treatment, it is difficult to imagine, that my theoretical prejudices should not give way, or that my ignorance should not be enlightened from the destruction I was committing, if it had been real. Venesection, arteriotomy, cathartics, and enemas—the alterative use of mercury, under certain circumstances—rubefacients and blisters—the cold and warm baths—the Hippocratic method of doing nothing when nothing is to be done—such was in fact the method I found most successful. It failed in black vomit, and so has every thing. In 1824 and 1825, I added the sulphate of quinine to this list, because the cases called for it. But in many powerful sporadic instances of remittent, even in these seasons, it was inadmissible. Not that its employment would have induced a fatal termination of the disease, but because it would have aggravated it, and made the recovery of the patient more difficult. For, indeed, these instances of bilious remittent fever were such, that the undisturbed efforts of the constitution generally sufficed to conquer them. In 1825 I have selected one of the most formidable among them for experiment, and have cured it by an infusion of senna leaves with Epsom salts exhibited daily; the morbid character giving way by gradual ameliorations corresponding to the operation of the medicine. In 1824 I have selected them for the expectant inert treatment; and, although the sufferings of the patients were greater, and the event probably procrastinated a few days, it was nevertheless equally happy. Blood-letting is useful in all seasons, but much more useful in some than in others, and in the early than in the latter months. It is adapted to a particular state of the general circulation only. In 1817 that precise species of circulation prevailed throughout June and July; and nothing could be more decided than the benefit which was derived from it. If the good effect of any remedy can be positively proved from the test of mere experiment, it is this; for if it produce amendment, it generally does so promptly and obviously.

9. A description is presented to us by Dr. D. of stomachs which he examined in 1822, and which he asserts on the authority of a

gentleman now dead, to have been similar to those, which I examined in 1820. As I examined a great number and great variety of the subjects that sunk under the destructive endemic disease of that year, and as I found the stomach more or less altered in all cases, it is possible that I might have submitted to the inspection of Dr. Kollock, some specimens in which the morbid vestiges were only slightly and partially traced. Certainly the description furnished in this communication, of the stomachs of 1822, does not correspond to the stomachs of 1820. And how should it? Would it not amount to a miracle if it did? The cause did not exist; the climate was comparatively pure in 1822. Do the bilious fevers of Philadelphia at this moment, (1826,) produce such ravages in the organs, as the great endemic of 1793? The author speaks of red spots chiefly about the orifices, in the cases which he saw; in a great majority of the cases which I saw, the whole mucous membrane was injected, and had been the fountain of copious hæmatemesis or black vomit; the capillary net-work was so replete with blood, that although I employed a microscopic glass, it was frequently impossible to distinguish divisions or vessels. The redness thus diffused was generally most accumulated about the orifices, and least over the remaining part of the surface; in the former case, frequently presenting the colour of violets, from the density of the engorgement, and in the latter, a colour approaching to that of arterial blood, from its thinness. It was sometimes more florid in one stomach than it was in others, and more or less florid in different stomachs. I have seen the whole mucous coat covered with spots of half the size of a pea perhaps, of a deep red hue, while the intervals were filled up with a florid colouring. Its texture was sometimes injured and softened. I have frequently, in cases where the injection was not too much condensed, distinguished the capillary vessels with the glass. The exudation of mucus was occasionally treble the normal quantity. I saw but one case of ulceration. From much recent investigation in France, it does not appear that the mucous membrane of the stomach is very liable to this sort of lesion. But Dr. D. saw it, in 1822, spotted in red, chiefly about the orifices, the red spots irregular in their shape, with black specks or points, and presenting the appearance of the minute extremities of veins very imperfectly injected. Indeed! is it possible to distinguish a vein in the reticular arrangement of the capillaries of the mucous membrane? And again to distinguish the extremity of it; and after all, to distinguish that extremity imperfectly injected? I have not a shadow of doubt about the correctness of the writer's statement. It was his impression, and thus far he commands all my faith. But is it not possible that he was deceived? Every man, all of us are sanguine in the pursuit of our theories. The stomachs of 1822 did exhibit the aspect which he describes, but he will pardon me, in two particulars, if I do not feel able to go as far as he does; first, in the conviction that those stomachs were similarly affected with those of 1820, and second, that it is practicable to distinguish capillary veins in the mucous membranes.

10. After thus picturing the appearance of the stomachs of 1822, and identifying it with that which is produced in yellow fever, he draws his deduction by asserting, that "this *certainly* is not inflammation, but an imperfect congestion," &c. Red spots, specks, and black points! If indeed these are not positive evidences of inflammatory alteration, they are clearly not conclusive proof to the contrary. Are they enough to demonstrate venous congestion *beyond doubt?* I confess for myself they are not irresistibly convincing. He asks for traces of inflammation, and when he does so, it is with reference not merely to the stomachs of 1822, but to the stomachs which have sustained injuries from genuine and unquestionable yellow fever. Those I have found were as follows: 1st, The mucous coat is sometimes found ulcerated. 2nd, It is covered with an extraordinary quantity of mucus. This has been observed by others as well as myself. The author himself furnishes one fact, viz. the dark bluish spot covered with mucus, of an appearance approaching almost to that of pus. Venous congestion could not produce a matter similar to this; an increased deposit of mucus upon a membrane, being an index of irritation. A diminution in the quantity of the mucus, a change in its quality, are so also. 3d, The membrane is sometimes abraded, as if by poison immediately applied. 4th, It is inflamed in some parts and gangrened in others, of the same viscus. 5th, All the coats are occasionally found in a softened state. These facts are reported by the highest authorities. They are terrible, but indubitable proofs of extreme inflammation. There is no room to

discredit them, or even to stigmatize them with a character of extravagance. The yellow fever of the West Indies, in which gangrene is said to seize the stomach, is a much more deadly disease than that which visited Savannah in 1822, and I am disposed to think, than that of 1820. The causes are all more intense. The heats are more powerful and more durable, the rains more abundant at the same epoch with the heats, the vegetation is as rank as it is any where else, irritability of the stomach greater as an effect of greater heat, and the predisposition more easily roused to excitements. It would therefore legitimately, follow, as a necessary consequence, that morbid impressions should be deeper and more indelible; and it would be an anomaly if it occurred otherwise. Causes and effects in medicine are like causes and effects throughout the rest of nature. They accord in the same manner. No wonder then that the stomachs of 1822, which are adduced by Dr. Daniell as specimens of the non-inflammatory *state, should* have exhibited fewer of the post-mortuary remnants of inflammation, than those in the vehement malady of 1820. No wonder that the evidence should have been less decided and the conviction less complete. For notwithstanding how thorough may be our opinions of the identity of yellow fever, remittent fever, and intermittent fever, it is nevertheless certain, that their grades of pathological derangement are separated by such wide intervals, that the organic alterations and the medical treatment, approach to specific differences.

11. Yellow fever is a disease of the mucous membranes peculiarly. But all morbid lesions, when they arrive at a certain point of violence, tend to produce secondary affections. Thus, in this, the other tissues frequently participate also, and exhibit, after death, the traces of inflammation; and our author is justifiable in demanding them, as necessary evidence of the nature of the disease which gives rise to them. He consequently asks where they are? and I am very fortunate in having it in my power to cite them; not upon my own, but upon much better authority. Hear what Bancroft says. When the affection of the head has formed the principal feature of the disorder, the integuments of the brain have been found generally more or less inflamed. The vessels of the dura mater and pia mater were not unfrequently observed turgid with blood; in some cases the integuments have been so

firmly *attached to each other* and to the brain, that in attempting to raise or separate them, a part of the substance of the brain has been torn up. The ventricles contained usually water of a yellow colour, and were in some cases quite filled with it. DICKINSON says, an examination, post mortem, exhibits unequivocal vestiges of previous inflammation. In the brain increased vascularity and deep redness of the membranes, rupture of the vessels, *adhesion* of the *hemispheres* and *membranes*, *coagulable lymph*, extravasated blood, serous effusion. Need I exhibit more authority? More could be exhibited if it were required.

12. The symptoms during life, in conjunction with the appearances after death, are additional and complete evidence of the inflammatory action. There is burning and pain in the stomach,—the pain being sometimes excruciating; excessive tenderness and soreness, or intolerable agony under the pressure of the hand at the epigastrium; great irritability and tendency to vomit when any thing is swallowed, but particularly stimulant substances generally. It is said that Cayenne pepper relieves that symptom. I tried it in 1820 without success; yet I am not disposed to dispute its effects in 1822, when yellow fever strictly speaking, did not exist. All acrimonious medicines which were administered by myself, or under my observation, appeared to me to aggravate and not to tranquillize. But it is not at all impossible, that an infusion of pepper may sometimes suspend vomiting, and relieve the distressing sensations which attend it. It may do that without contributing in the most minute degree to conquer the irritation which gives rise to it. Nausea and vomiting are sympathetic affections of the nervous system and of certain muscles. They result from irritations of the mucous membrane very frequently; but they are not seldom produced by the disease of organs remote from the stomach. The inflammation of the mucous membranes is not, then, inseparably united with them. Hence it is, that remedies are sometimes administered for the purpose of suppressing them, as troublesome or pernicious secondary affections, which so far from being designed to cure the disease itself, are known to aggravate it. But it is a balancing between evils, the injury done on the one hand, and the injury removed on the other. And the practitioner ought to be very sure, that the mischief done by himself shall not exceed that which he re-

medies, and thus the evil overbalance the good. It is upon this principle that opium is often administered in bilious fever; not to cure, but to remove a potent cause of irritation, and an obstacle to the cure. I have seen it combined with calomel, to give the latter access to the salivary glands, and have used it considerably myself in this way. But it is some time since I laid it aside entirely, under the conviction, that the compensation was not equivalent to its bad effect. Opium is frequently given upon the same principle to obtund pain. But it is one thing to vanquish pain, and another to heal the morbid lesion which produces it. The one attaches itself to the animal sensibility, while the other is a quality of the organic. An anodyne will suspend the pain of the side in pleurisy, but it is not given to cure pleurisy itself. Hence it is obvious, that although Cayenne pepper may relieve in certain cases of vomiting, it is by no means demonstrated that it removes the morbid affection, or even that it does not aggravate it. As to *black vomiting*, I suspect that neither that nor any thing else can prove efficient in it. The author does not positively assert that it does, at least I do not understand him so; he will, therefore, allow me to be sceptical. The symptoms of gastric irritation being such as I have enumerated, are chiefly similar to those which appear in irritations at the surface of the body, where the discoloration or disorganization is associated with them under the eye. But, is it possible to doubt its existence, even if it were doubtful before, when in like manner it is brought under the inspection immediately after death? What difference does it make whether these organic alterations be seen antecedent or subsequent to that event? They are as certain, and to the morbid anatomist, as well characterized, in the one case as in the other. When pain, preternatural sensibility, and a sense of heat, are joined with a red injection of the superficial capillaries of the skin, do we call it venous congestion? It is called erysipelas,—an inflammatory disease. When these accidents occur in the mucous membrane of the stomach, there is no reason under the sun that I can perceive, why the affection of which they are the characteristics should be called venous congestion, and not inflammatory also.

13. One of the prominent causes of mistake in regard to disease of the mucous membranes, consists in confining the attention and the judgment to the gradations of colour, without regard to

the texture. **Lallemand** of Montpellier, and others, but chiefly the former, have demonstrated, that one of the effects of inflammatory action is a softening of the animal fibre. It reduces the solidity of parts, and renders them more easy to rupture. This state is probably produced by inordinate influx of fluids, tension of vessels, and violent commotion. The aggregate affinities are broken, and the whole structure is altered after a manner which cannot be explained, without a better knowledge of the intimate nature of animal matter. It assumes various aspects according to circumstances. When it is chronically affected, as in certain cases of gastritis, it does not present a florid appearance,—the capillaries not appearing to contain much blood. I have seen a remarkable instance of this in the early part of the present year (1826.) The mucous membrane was so much dissolved, that it could be removed by the thumb nail, without the least difficulty. Many similar cases are recorded in the Archives Generales de Medecine by **Louis**, which were collected at the hospital La Charité. This writer, who details the particulars of chronic cases only, asserts that the colour is immaterial, and does not furnish a criterion of the extent of the lesion. **Scoutetten**, of Lille, speaks of this effect of inflammation also. The colour, he observes, varies from a dirty white, to the gray, and red, like the lees of wine. Sometimes it is blue, and at others brown. The membrane in these cases is often subject to erosions. The disorganization seems to be so gradually operated, that the red colour may not be intense at any time; and when the softening is much advanced, the vessels are too feeble to accumulate a great quantity of blood. Hence it happens, that when the dissolution is most complete, the paleness is greatest. The colouring being really inversely as the disorganization. When this inflammatory softening is more abrupt, the redness is florid or livid, as in certain cases of yellow fever. **Bancroft** says that, in some instances, almost the whole inner surface of the stomach was inflamed, and very often portions of the villous coat were abraded, nor unfrequently observed floating among the contents of that viscus. So **Pinckard** also observes, that he detected a spot livid, and so much softened, that he thrust his finger through it without difficulty. When the softening is carried still farther by a more precipitated process, then it falls within the limits of gangrene. As, for instance, Deveze remarks, that he found in the early part of the season of 1793, in Philadelphia, the mucous coat inflamed and red only; but in the latter part, when the disease had attained greater severity, the membrane was found in a gangrenous state and partially destroyed. Cases of high bilious fever, among us, particularly when they occur in European constitutions, frequently present the whole surface of the stomach, from one orifice to the other, in a florid or livid state without much softening. These fevers are much less rapid than those which Mr. Deveze has depicted, or than those which Bancroft and Pinckard describe, continuing their course to twice or thrice their duration. They do not appear to be violent enough to break down the tissue at once in a similar manner, though they produce in the mucous membrane, an alteration of colour very often equally intense. A comparison between the membranes impressed with these two states of inflammation, exhibits nearly the same varieties and depth of complexion, but a vast difference in the condition of the texture. The injection of the capillaries and the force of the irritation, appear then to accord in a limited degree only. So that it would be difficult, nay, altogether impracticable, to determine the intensity of the disease by the colour alone. It is very possible therefore to find the mucous membrane in a red, brown, or even a livid state, as did Dr. Daniell in a case which he adduces, and yet preserving very nearly its tenacity or natural firmness. The livid or dark colour is consistent with both inflammatory action and considerable strength of texture. But I am going much beyond the bounds which I had prescribed to myself. I will only make a few more remarks on depleting remedies, and then bring this paper to its conclusion.

14. The depleting or tranquillizing system of practice appears to me, as I have already said, to be pre-eminently adapted to the cure of remittent fever in Savannah; not according to any fixed routine, nor to any precise extent, but proportioned and suited to the circumstances of the case. There is nothing more indefinite than our meaning of stimulant and sedative. These words are constantly in our lips without a mutual intelligence of their signification, and very often, I have no doubt, without any fixed signification for our own use. This remark is so well founded, that when I hear an individual denouncing the anti-stimulant treatment

of fever, in general terms, because he has not been successful in the use of it, he does not gain an inch in shaking my faith in it. I require him to state the precise condition of the patient, and the sort and method of depletion, as well as its extent. If he administer a medicine, I require him to state its name, its dose, its form of exhibition, the intervals of the doses, and whether it be given indiscriminately throughout the paroxysms and remissions, or only during the one or the other. For there is as much difference between the effects of depletion in the hands of different practitioners, as there is between the effects of stimulants and sedatives. It is not enough to say I have depleted and failed, or that I have stimulated and succeeded. For depletions clumsily used, may be more destructive than stimulants cautiously administered; and yet, after all, the depletion be proper, and the stimulants inappropriate. One gives his patient a drastic cathartic, while another would give a laxative only, or even refrain from giving any thing. One evacuates during the paroxysm, another during the remission, and another again goes on blundering with his evacuations through both. One takes away sixteen ounces of blood, another six ounces only.* One takes the case entirely out of the hands of the constitutional power, and such are not uncommon, while another more sanguine in the efficacy of that power, trusts to it altogether. One considers the disease as settled in the capillary vessels of an organ, while another considers it as belonging to the sanguiferous system generally; and thus, while the one aims all his efforts at a part, the other cares nothing about the local affection, and diffuses his attention to all the blood-vessels. What can be more different than the practice of Dr. RUSH and that of Mr. BROUSSAIS? What can be more different than their medicinal agents? Yet both claim to treat fevers chiefly by depletion. They all deplete. But in a critical case, a case in which nature happens not to be sufficiently energetic to combat both physician and disease, it is beyond question, that while the conduct of one might succeed in overcoming the morbid condition, that of the other would aggravate it and destroy the patient.

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* The manner in which bleeding is performed every where in our country, is exceedingly careless. The majority of physicians, I think, have a certain fixed amount in their mind, which they always govern themselves by when they determine that an evacuation of blood is proper. Some distinguished writers even lay down the quantity which is to be considered a large bleeding, and that which is to be considered a small one. In many places the physicians themselves scarcely have the ability to bleed. They have the habit of resorting to a bleeder; and very often prescribe to the patient the number of ounces of blood he is to lose, and go away without seeing it done. When a general epidemic prevails, if the medical attendant do not use the lancet himself, he is obliged to pursue this course, for his time will not allow him to wait ten or fifteen minutes or longer, until the bleeder can be brought. The consequences of this practice are evidently most pernicious. No man, in a case of serious fever, can know the exact quantity of blood that ought to be taken away, by a mere examination of the symptoms. He must first make the experiment. It is frequently impossible to know even whether bleeding be proper until the operation has been performed. The state of the pulse is the principal criterion. But that is often oppressed, and indicates debility when it does not exist, and is sometimes vigorous and indicates strength, when the patient is destitute of stamina. Thousands of lives are probably cut off by this abuse of rashly

15. During the prevalence of a sweeping endemic, it is very curious to hear some physicians proclaiming their constant successes with the evacuant remedies, while others confess their disappointments and failures. Indeed there is nothing more difficult than to manage them properly, and to graduate them aright. It requires a tact which no book but that of experience can teach; and even that is not sufficient without natural sagacity, and the talent of minute observation. A rash and impatient man despises the slow operations of nature in all cases without distinction; his precipitating imagination induces him frequently to wrest the disease altogether from her hand, when no other hand but hers can cure. The judicious interfere only when nature is feeble and erring. Fevers must pass through certain stages of rise and decline. All great practitioners have been obliged to pay regard to them. He who evacuates without allowance for such constitutional operations, in grave diseases of the febrile character, with the design of cutting down and extinguishing the malady at a single blow, prostrates the patient without rendering him any benefit. I shall never forget my early experience on this point of practice. All young men fancy that the science is all, and that

directing the amount of blood which shall be drawn in critical cases of disease, and by the employment of bleeders. It is one of the causes of the discredit into which the antiphlogistic treatment sometimes falls.

nature is to be forced and not indulged or guided. Age seldom fails to correct that folly, and to show how destructive art becomes when its weakness is not well understood, and when it is thrust in unceasingly to disturb or cripple the salutary efforts of the preservative principles of the body. He who reduces intemperate excitement when it exists, within certain bounds, fulfils his office when he stops there. If he continue to reduce it, in the expectation of crushing the disease by reducing it, he exceeds his function and encroaches on that of nature. Thus, in the eruptive contagions, as small pox or measles, where the virulence of the virus does not vary a great deal, there are certain symptoms followed by an inflammatory affection of the skin. An attempt to lop off the cutaneous stage of one of these diseases by free depletions, would be preposterous at least, if not prejudicial and destructive. All that the physician can do, or ought to do, is to moderate excessive tumult in the irritation of important organs, when it occurs, and then to permit the case to run through its stages without vain efforts to curtail it. The small pox can be tempered frequently into a mild disease; but it cannot be suddenly stopped in its career without unfortunate consequences. Whether it be owing to the poison itself, or the impression which it produces, may be difficult to determine; but it is clear that, the morbid affection being implanted, a certain process of constitutional movements becomes necessary to remove it, over which we have no control, except that of limiting and directing to more or less extent. We can modify to a certain degree, but we cannot annihilate without ruin to the patient. By antiphlogistic measures, as cool air, vegetable diet, &c. &c. it may be in our power to diminish the excitement of the fever, and the quantity or depth of the eruption, but not to prevent its appearance. Now I cannot see why the same principle should not prevail in remittent and continued fevers, which are produced also by a poison of a peculiar species. An injury appears to be inflicted upon one or more organs, upon the mucous membranes probably. What the secret nature of that injury is, we do not understand. It indicates its existence, however, by what we call inflammation—heat, redness, increased sensibility, &c. in the part, and secondarily in some other organs; precisely as the small pox does. It is usual to call it a mere vital lesion, and not an organic one; but no satisfactory reason has ever been given why it should not be considered organic also. It is doubtless an alteration of structure from the sound state; and that places it in the same rank with the organic lesions, although the alteration in these may be much greater. Thus a part inflamed stands on the footing of a part wounded, which sustains a solution of continuity. The physician is able sometimes to place it in condition to repair the injury which it suffers, but he is not able to repair it himself. That must be effected by the restorative power which is intrinsic in the constitution. Hence we observe, that when a contusion is inflicted upon the external surface of the body, an inflammation is immediately established for the purpose of curing it, and every surgeon knows that the part will not recover its soundness without it. This inflammation is allowed to exist and countenanced, until the integrity of the part is restored to it: it is perceived to pass through ascending and descending gradations, until the event takes place; and no judicious person will attempt to arrest them, although he might properly moderate their excesses. The course of gradations which are incident to an inflammation brought on in this manner, lasts through a longer or shorter time, according to the irritability of the part, and the power of the agent which induces it; so that the duration of an inflammation is always uncertain, and is proportioned to these circumstances. It is in consequence of these laws of the animal economy, which are exemplified under the eye, in the instances here adduced, that remittent and continued fevers have various specific durations in different seasons, and in different periods of the same season. And it is very remarkable sometimes to see how constant at a particular moment nature appears to be in conforming to her rule. In yellow fever, for instance, the disease will be found in a hundred cases at the same time, to run through an equal number of days. A uniform impulse seems to be given, and a uniform movement to be produced, as in mechanics. The mucous membranes are inflamed in a uniform degree, the inflammation runs through its gradations, and terminates in conformity with that degree. The symptomatic fever which accompanies, and is the consequence of it, pursues a corresponding course, and terminates at length, when the membranous inflammation terminates, very frequently by what is called a critical struggle and discharge. This is the foundation of the doctrine of critical days; which probably meant no more originally than the duration of a disease, agreeably to the extent of the injury. Thus gradations in fever seem to be necessary and inevitable, and the physician who determines to succeed with his depletions, must recognise them. If he proceed without that knowledge, he will destroy where the constitution is not strong enough to put him at defiance.

17. The ancients, at the head of whom was HIPPOCRATES, explained every thing by the theory of the humoral pathology. They conceived that a sort of concoction took place in the fluids, and that when the morbid virus had been separated from them by that means, it was eliminated by a crisis or effort. The concoction and crisis, although fancifully expatiated upon afterwards, were, in the first instance, founded upon observation. They constituted a method for explaining what was seen to occur. In well marked cases of fevers, it was remarked that evacuant remedies could not be used at certain times with so much advantage as at others, and at certain other times, they could not be used with safety. Generally, the period preferred for evacuation, was after the concoction was completed. These ideas may have been pushed too far; much beyond the legitimate boundary no doubt; but such a matter of fact man as HIPPOCRATES would scarcely have refrained from interfering in certain tumults of the system, if experience had not taught him that they were useful, or that it did no good to suppress them. The basis of this reliance upon the vis medicatrix, and of restriction upon medical applications, was most probably correct; though imaginary speculations subsequently introduced errors. A fever, said the ancients, is necessary; and why? because we observe that if you cut down that apparent effervescence which constitutes it, the patient suffers. You may moderate it, but you cannot extinguish it suddenly with impunity. It is a struggle which nature makes to deliver herself from a cause which threatens her existence. Here an important fact is stated, independently of the metaphorical rationale which is attached to it. In fevers, the febrile tumult is necessary for the cure. For my own part, I do not hesitate to admit the truth of this assertion, although it is now fashionable to deny it. A fever is a revulsive effort made by the heart and other organs, to relieve the mucous membranes, which the symptoms and the dissections

prove to be the primitive seat of the disease. The heart sympathises and becomes more active, the liver is excited and secretes a greater quantity of bile, the brain is irritated and becomes painful, the skin and its capillaries grow hot and circulate a greater share of blood than usual. The most distressing part of a paroxysm of fever is that flux and reflux of hot and cold sensations, which precedes the establishment of the hot fit. Until this takes place, the patient is frequently harassed and agitated to madness. He cannot remain in the same posture one minute. But as soon as the heart, the brain, the skin, &c. participate in the morbid excitement, it becomes proportionably diminished in the mucous membranes of the stomach, &c. and he acquires a great degree of tranquillity, or even falls asleep. I view, therefore, the affection of these organs as so many natural diversions, or revulsions, set up by nature for the purpose of saving from destruction the part originally attacked. Indeed, there can scarcely be a *doubt, that* the vital principle would be entirely extinguished in the species of cold fit which I have just alluded to, if these sympathetic irritations did not ensue. There is, in fact, an example of this in those cases of endemic fever, where the patient is prostrated, becomes cold over the whole surface of the body, and dies in the first paroxysm. Death is thus brought on in consequence of the want of fever, or the secondary irritations of the heart, skin, brain, liver, &c. They are the natural rubefacients, which are instituted by the preservative power of the body, for the purpose of enabling the organs to aid each other, when labouring under disease. These secondary affections are of such high importance, that, when they are established in a fit degree, they are to be considered as remedies, and cherished. When they are too much weakened by excessive or ill-timed depletion, intermittents are converted into remittents, and remittents into continued fevers. Every practitioner must have witnessed the procrastination of a period of fever beyond its usual time by a profuse bleeding; the sweating, remission, and other symptoms of alleviation, have been deferred, and the disease, instead of having been reduced, has been aggravated. Sometimes the patient sinks into what is denominated the typhous state, and the periodical amelioration never re-appears. The heart, the capillaries of the external surface, the liver, &c. are so immediately and excessively depleted, that those organs have no longer sufficient power to maintain the revulsive diversions, and a consequent concentration of disease takes place in the mucous membranes primitively assailed. In circumstances such as these, (which constitute, by the way, a genuine typhus,) nothing saves the patient but reinvigorated contractions of the heart, restored circulation in the skin, copious secretions of bile from the liver, &c., the development of the pulse at the wrist, and indeed the general renewal of the secondary irritations. The return of these states resuscitates him instantly, and not rarely rescues him from destruction. But, as it is common to do in cases of this kind, they are not to be re-established by stimulating the mucous membranes with alcohol or acrimonious substances, which redouble the concentration of excitement already produced in them. It is the business of art, to restore them; but not by that channel and by such means. Rubefacients and blisters to the abdomen and the extremities, emollient injections, small doses of castor oil, for the sole purpose of removing fœcal irritants, lubricating and cooling drinks, barley decoction for food, are the most successful means which I have employed. There are many cases, in which even the oil and injections should be laid aside, and nothing exhibited internally but the drinks. I have seen great numbers of these cases conquered without medicine. Nature, undisturbed by the physician, has rallied, the heart has been perceived gradually to become more active, the warmth and circulation of the skin to be restored, the mucous membranes to become less irritated, in proportion as the secondary affections were reinstated, and the patient thus elevated from his depressed condition, without a stimulant of any sort having been swallowed. No one can conceive how efficient are the native energies of the constitution, under these circumstances, who has not frequently trusted them and witnessed such cases.

18. Where the secondary affections are feeble, and the concentration of irritation extreme in the mucous membranes, yellow fever takes place. It is a disease of the capillary system, and bleeding from the general circulation, as well as copious depletion of any kind, generally prove destructive. The secondary affections are annihilated, and the stomach overwhelmed. External irritation, diluent drinks, and mild evacuants, are the proper means to remove this state of things. I have no experience in

the effects of capillary depletion myself, but I have no doubt of its preference to depletion from the system at large. It does not operate upon the heart so much, and is likely to operate much more by capillary sympathy upon the part diseased; for an increased activity of and exhalation from the external capillaries, as must occur under topical blood-letting, would be probably attended by a decreased activity of the internal capillaries, and of course by a reduction of the disease. There are some very interesting facts contained in BROUSSAIS' Annales de la Medecine Physiologique for 1823 and 1825, volumes 4th and 7th, which confirm these speculations.

The first are furnished in a statement of the symptoms and treatment of yellow fever at Port du Passage, in September, 1823, by E. L. JOURDAIN, military physician in chief at the hospital of Dax. The author found general bleedings fatal; vomits aggravated the disease; stimulant injections produced the same bad effect. Leeches applied to the epigastrium in great numbers, at the beginning, oils, particularly the oil of almonds and mucilaginous drinks administered internally, mild injections, blisters and sinapisms at the *end of the second period* of the disease, were the remedies which he found most useful. The deaths were 24 of 85 seized with the disease. The second are furnished by Don J. A. FERRAN, a respectable physician at Xeres, in a statement which he drew up for a public purpose, in relation to the yellow fever of 1820 and 1821, at that place. The author asserts, that of 37 patients he cured 34; that in 1820, according to the old method of treatment, (stimulant,) 35 out of a hundred, and in 1821, 50 out of a hundred died, and that according to the new or antiphlogistic method, 5 only out of a hundred died. His remedies consist in local bleeding according to the need, diluent drinks of gum or acid, and taken temperate, light diet, sinapisms often repeated upon the extremities, mild injections, fomentations to the abdomen. This statement, by Dr. FERRAN, was communicated for the use of the Journal, by Dr. CHERVIN; who came to Savannah in 1820, during the prevalence of yellow fever. I had at that time much conversation with this admirable person; who had seen more of this fatal disease under different circumstances, than any other man. He had seen the employment of all sorts of treatment in various countries; and he assured me, that although the fatality would be great under any, yet it appeared to him, that it was less under the antiphlogistic than any other. We were much together at the hospital of which I had the charge; and he recommended the use of small doses of castor oil, diluent drinks, cream of tartar, gum Arabic, the vesicatoire volant, &c. Although I commenced this kind of practice late, yet my observations were still sufficiently numerous to convince me of its advantage. Dr. Chervin has also communicated to Broussais, a letter from Dr. Vatable, of Guadaloupe, which confirms still more the benefit which may be derived from this species of therapeutics. Dr. V. states, that since he has employed it, the mortality in the hospitals has much decreased for some years past. In consequence of the prejudices, the inexactness, or the self love of medical men, statements of this kind are always indeed to be held in some degree of doubt, and are to be valued only as recommendatory to others. There is no name more indefinite and uncertain than yellow fever, and the remedies, as a matter of course, when they are attached to the name only, must be so also. I have spoken of it in this paragraph as a grade, and not as specifically distinct from bilious fever.

18. When the sympathy of the heart and other organs is too much roused, the revulsion becomes as injurious by excess as it is useless when deficient. This state is attended with strong pulse at the wrist, throbbing pain in the head, sensations of heat and thirst, flushing of the cheeks, inordinate secretions of bilious matter, yellow complexion, and sometimes delirium and phrenzy. The secondary affections, in this state, not only reflect upon the part primitively diseased, but become themselves an important object of treatment. The revulsive action of the heart must be reduced by abstraction of blood from the great vessels, that of the brain by lancing the large superficial veins of the neck, and by applications of ice, that of the skin by the cold bath, and that of the liver by cathartics to remove the vast accumulations of bile. Of this practice, in such cases, the success is indubitable. I know it well. Both external and internal stimulants add to the evil, and render it destructive. This state of the secondary irritations is a common occurrence in the early parts of the progress of our endemics. They come on with strong pulses, acute pains, and burning heats; and are easily managed by copious depletion from the sys-

tem generally. The topical or capillary bleeding and the emollient method, do not suffice. It would be presenting a pebble to stop the current of a river. Later in the season, the assault upon the stomach becomes more powerful. That viscus begins to engross a more undue share of excitement; the heart and other organs commence sympathising more feebly; and the secondary affections are less conspicuously developed. These effects, at a later period, are carried still farther; and finally, as in cases of black vomit, they are wrought up to the extremity of concentrated irritation. To manage the depleting remedies in accordance with these changes, requires no ordinary degree of sagacity. The excitement retreats, step after step, from the periphery; the treatment must pursue, step by step also, a corresponding career; and it is a difficult process to maintain the proper pace, so as neither to continue the vigorous remedies too long, nor to suspend them too soon. I have found myself first obliged to abandon *bleeding from the* general circulation, and to prosecute the employment of cathartics only. Then to lay aside the active cathartics, and to use none but the least irritating; and finally to resign all blood-letting and all purges, reserving the use of the injections of cathartic matters, or even of the most emollient substances, as flaxseed tea, or thin arrow root. I have already spoken of the pure expectant method in certain cases. The plan of the mulattresses of the West Indies, which has been so much celebrated in the management of yellow fever, would be perfectly adapted to these last grades of our endemics, and is very nearly that which I have employed in them. It consists in applications of lime juice to the skin, lime juice drinks and injections, and the warm bath. Lime juice, in form of lemonade, is freely used with us internally, but its external employment I have never witnessed enough to express an opinion of it.

19. From this slight sketch of the sedative method of treating fever, it is perceived how much intelligence and dexterity is necessary to carry it properly into effect. They are so necessary, that it is not in the power of every individual to succeed in the application of it. Natural discernment, experience and industry to improve that discernment, prudence and firmness, are indispensable requisites. It is easy to learn the names of pulses, to learn that there are various grades of fever, that there are

various distributions of excitement to the organs, that different quantities and appropriations of depletion are to be employed, without being able to distinguish them and to practise upon them. The medical ability of the closet is one thing, that of the bedside is another. The former is common enough, the latter is a rare quality, which few possess in eminent degree. Tacticians abound; yet how small is that number who execute, in a masterly manner, the rules which are comprehended in the science of war! SYDENHAM is acknowledged on all hands to have been a sagacious man, and he seemed to have been born for his profession. Yet even SYDENHAM talks of his embarrassments; not of the inefficacy of his remedies, but of the fit administration of them. When I speak thus of the difficulties of carrying into execution the tranquillizing system of measures, it is from personal observation. I know, from the humble improvements which I have made from time to time, in the use of them, that they are capable of effecting much which they frequently do not effect for want of skill. And when I make this remark, it is more in reference to myself than to others, the fault of failure being often my own, rather than of the means which I have employed. So well persuaded am I, of the need of nice perception, judgment, caution, patience, vigour, and all good qualities, to treat fevers agreeably to this mode, that I think, that where the practitioner happens not to possess them, it is better that he should do nothing in many cases, even where something ought to be done. For it is preferable to confide in the natural power than to blunder. The secondary affections once annihilated by mistake, in evacuating too much, the restoration of the patient becomes frequently impracticable. He sinks to rise no more. It is in vain to administer, in conformity with the ordinary routine, stimulating and tonic medicines. They are ineffectual or prejudicial. A physician of considerable experience constantly warned me against intemperate depletion, when I first went to Savannah. If, said he, you prostrate your patient by excessive bleeding or purging, he falls into typhus, from which you will find it generally impossible to extricate him. I have repeatedly seen a case decided by one profuse discharge from the bowels; and the dying of the patient on the pot has not been an uncommon thing in the United States. This fact is so well felt and understood, that some judicious men never administer a full cathartic at one dose. They divide it into many parts, and order them to be given at prudent intervals, until the effect which they desire is precisely produced. If the case be critical and delicate, demanding gentle and exact effects, they do not leave any thing to the discretion of the nurse, but devote their personal vigilance for the purpose of assuring the safe and proper limitation. I think that enough has been now said to show how many accomplishments are necessary to form a finished practitioner with sedative remedies. It is evident that a studied experience is indispensable, and that no mere scholarship can be sufficient. It requires many years to learn the art of fencing with perfect adroitness. Would it be wise in an individual, who should fail to acquire the highest degree of dexterity in a few months, to condemn the sword as an inefficient weapon in defence?

ARTICLE II.—*Account of a Child who took Stramonium.*

By CH. D. MEIGS, M. D.

I BELIEVE that examples of poisoning by stramonium are not very common: certainly accounts of this affection are not so very numerous as to have become fatiguing, and as there is some difference in the statements of symptoms produced by the use of this weed, I have related the case below. When I was a student of medicine, my teacher, who was much employed in practice, took me to see a young girl, who had swallowed a number of seeds for the purpose of self-destruction. She was insensible, completely tetanic, and had a very dilated pupil. She recovered. I recollect that Dr. FENDALL had never seen but one case before.

The effect produced by stramonium on some of the first settlers of Virginia, was a high degree of intoxication.

The case which I am going to describe, occurred in a girl two years and a half old, daughter of Mr. C. Stelwagen. On the 24th October, 1824, (forenoon,) she had found a small bag, containing stramonium seeds, of which she ate an unknown quantity. The first symptom was a high degree of exhilaration, in which she excited much merriment by her extravagant gestures and speeches. This soon became alarming; and when I was called to see her, she was laughing, crying, and singing, by turns, proceeding from one to the other state with the greatest rapidity. She occasionally started with great force and alarm, crying out that she was going to fall; when she would cling to her mother with as much desperation as if she was about to be thrown from a precipice. She would next become calm, then whistle, and afterwards point with her finger at muscæ volitantes, which she followed with the eye and hand, at last clutching at them, with an appearance of disappointment at the want of success.

The colour of her face was of a scarlet red. I have certainly never seen so intense a red in scarlatina. Her skin was hot; pulse much accelerated; and tongue and fauces dry and red; the former was so dry that it glistened. The face, neck, and breast were covered with hundreds of small brilliant petechiæ, many of which had a stellated form.

After an emetic, which operated very well and brought up only one seed, I gave her senna infusion, with repeated enemata. The nurse told me she had found 40 seeds in the evacuated matters.

The cerébral symptoms I have described gradually diminished till midnight, when she fell asleep. On the 25th she was tolerably well. The petechiæ were still quite evident, not being much changed. A troublesome itching of the whole skin, which came on yesterday, was gone.—27th. The child is well, but the petechiæ are not gone.

Nov. 4th. They are no longer visible.

ARTICLE III.—*Observations on the use of Balsam Copaiba in chronic Inflammation of the Mucous Membrane of the Lungs.* By R. LA ROCHE, M. D.

THE introduction of the Balsam Copaiba as a therapeutical agent in the management of chronic cough, may be traced to an early period in the history of our art, as it is found to have been prescribed in such complaints by some of the older writers. By MORTON, who was among the first to introduce it in the treatment of this disease, and by HOFFMAN, it was administered with success; and with FULLER it constituted a favourite remedy. In his work on the materia medica, CARTHEUSER, confirming what had been said on the subject, informs us that it is advantageously used for the purpose of healing ulcers of the lungs; and by Sir JOHN PRINGLE and VAN SWIETEN, it was had recourse to, with a view of effecting this desired object. At a later period it was warmly recommended by Dr. FOART SIMMONS; and Dr. HALLE, in his notes on TISSOT, mentions that he exhibited it with great success, in a case in which, after a pleurisy, catarrhal symptoms continued, attended with fever and expectoration of matter apparently purulent.

Long, however, as the copaiba has been employed in pulmonary complaints, it is not until a very few years that the cases in which it is used with most success, have been accurately defined. To Dr. ARMSTRONG, of London, credit is doubtless due, for having shown, in his treatise on consumption, that this remedy is serviceable in chronic inflammation of the mucous tissue of the lungs, and not in a similar condition of the parenchymatous structure of these organs. But even this judicious writer has neglected to point out some circumstances in these cases, without a careful attention to which, the physician will often be disappointed in the employment of the balsam. Having for some years prescribed it in affections of the lungs, I propose now to lay the result of my experience with it, before the readers of this Journal.

In doing this, it is first necessary to specify those cases of pulmonary complaints, in which this remedy has been found more decidedly effectual. As already remarked, it is in chronic inflammation of the mucous membrane of the lungs;—in other words, in the disease termed chronic catarrh. In his work entitled "de l'Auscultation médiate," LAENNEC has divided this malady into two varieties,—the humid and the dry; and the former he has subdivided into mucous catarrh, in which the expectoration is yellow and opaque, and the pituitous, in which the matter is transparent, white, ropy, and resembling the white of an egg mixed with water. The balsam copaiba will be found beneficial in both varieties of the humid catarrh; but were I allowed to advance an opinion founded on the result of my own personal experience, I should feel inclined to say, that it will be found more particularly useful in the former.

After thus pointing out the particular form of pulmonary affection in which the balsam copaiba will be found most serviceable, I shall next very briefly direct attention to its modus operandi in such complaints. In doing this, it will be proper to recall to the mind the principal phenomena observed when we administer this remedy. Exhibited in a sufficiently large dose, and in a healthy stomach, it will in general be found to stimulate pretty actively the digestive organs, to occasion heat and an acrid sensation in the throat, some heat in the stomach, and sometimes all over the system, frequency of pulse, in some instances nausea, colicky pain, and catharsis, and in most cases an increase of the secretion of urine, to which it imparts a peculiar appearance and smell. When the stomach, however, is labouring under irritation, this medicine is found to exert a more powerful action on that important viscus, and to aggravate the existing disease. From all this it naturally follows, that whatever be its modus operandi in the cure of disease, balsam copaiba must be regarded as a stimulant, and consequently should not be prescribed indiscriminately in all cases, without a careful attention to the state of the system, and more especially of the organ to which it is applied. But to return to the question more particularly before us. Without alluding here to the supposed vulnerary virtues of the copaiba, as believed in by the older writers, we shall observe, that the opinions of physicians on the subject before us are diversified; some maintaining that it acts by virtue of a specific action on the mucous surfaces; hence, they say, the advantage we derive from its use in gonorrhœa, gleet, catarrhus vesicæ, leucorrhœa, &c.; others, that it acts by stimulating the affected mucous membrane, either sympathetically or through the medium of the circulation; a third class of physicians entertaining the opinion, that in all cases of chronic bronchitis, the copaiba does good by stimulating the stomach, thereby attracting on that organ a part of the irritation existing in the lungs; in other words, by operating as a mere revulsive on the stomach. Lastly, some believe that it produces its effects by impression on the urinary organs, occasioning on these a stimulating action, by which the irritation of the mucous surface, constituting the disease, is gradually relieved, and finally is made to disappear,—giving way to the healthy action of the parts.

The limits to which I am forced to restrict myself on the present occasion, compelling me to omit publishing the remarks I had prepared on the three first opinions above mentioned, I shall merely offer a few words in support of the last, to which, I believe, too little attention has been paid by physicians. Without rejecting the views to which I have alluded, I am inclined to believe that the balsam copaiba exerts a beneficial influence in chronic bronchitis, by virtue of a revulsive action produced by it upon the urinary apparatus; perhaps more particularly on the mucous surface of these parts. The sympathies which the different portions of this membrane exercise on each other, have been at all times acknowledged; though in our explanation of the phenomena of disease, or of the action of remedies, we have not devoted to them that degree of attention to which they are so deservedly entitled. Without necessarily carrying our views to the extent done by some modern pathologists, we shall find, on careful investigation, that many remedies operate on the system on the principle of revulsion,—which principle cannot be satisfactorily understood without bearing in mind the sympathetic union of all the tissues and organs of our system. Now, if *with this* fact in view, we examine the effects of the balsam copaiba, we shall find no difficulty in understanding, that this remedy is beneficial in those affections of the lungs to which the attention of the reader has been called, mainly by producing a revulsive action on the mucous surface and secretory vessels of the urinary apparatus; which action is so much the greater, as there exists between these parts an evident and intimate association, evinced by the fact, that these organs are among those charged with depurative functions,—possessing an antagonizing action, and relieving each other from undue irritations.

These are not the only reasons, however, which lead me to adopt this view of the subject. In all my trials with the remedy, I have invariably found, that in those cases in which its exhibition has been attended with advantageous results, it has always acted on the urinary organs either by augmenting the secretion of urine, or at least imparting to this fluid a peculiar smell, and a brownish appearance. 2. In these cases, it did not affect sensibly the stomach or bowels, and therefore could not have produced on these organs an irritation capable of diminishing that existing in the lungs. 3. My belief is the more strengthened from the consideration of the fact, that the same benefit is derived, in similar affections of the lungs, from remedies which are classed among the most energetic of the diuretics; as for example, garlic, cantharides, colchicum, &c. Nor have all physicians failed to notice this revulsive action from the lungs to the urinary organs. Not to cite many names, I shall merely call attention to the sentiments of Dr. **Waterhouse**, contained in his work on whooping cough; who, alluding to cantharides, says, that they produce benefit by stimulating the urinary organs. It is not unlikely, then, that balsam copaiba acts in this way in the cure of chronic inflammation of the lungs, as much as by a specific action on the whole tract of the mucous membranes. Speaking of its modus operandi in gonorrhœa, Dr. **Broussais** suggests the idea that the balsam acts by virtue of an expansive diffusible excitement produced by it, and which is principally spent on the secretory organs, and disseminates the irritation at the expense of that already existing.* This would still be explaining it on the principles of revulsion. But were it true that balsam copaiba acted in this way, and were all secretory organs excited by this remedy, the disease of the lungs would necessarily be aggravated, since the secretory action producing the matter expectorated would also be excited. The opinion above adverted to would seem, however, to be in some measure invalidated by one advanced by **Miquel**, in his critical letters on the doctrine of **Broussais**, and by a much higher authority, Professor **Lallemand**; (Lettres sur l'Encephale, Let. 2. p. 489;) namely, that a revulsive must, in order to cure, occasion an inflammation greater than the original one. That such a sentiment is correct in many instances, as for example, in acute diseases, may be admitted; for we generally find in such cases, that the irritation of the remedy, if too weak, instead of removing the first affection, aggravates it; but we daily see in chronic inflammations, slight irritation applied to a large and sensitive surface, produce relief, even when we cannot for a moment admit that the remedy is more powerful than the disease. Who has not derived a revulsive and beneficial effect from embrocations in chronic rheumatism, from warm pediluvia in affections of the head, or from stimulating injections in various diseases?

Before proceeding farther, I must here endeavour to anticipate an objection, which, by some, might be offered to the view I have taken of the subject before us. It is a fact which, though to some it may appear unaccountable, is nevertheless true, that some substances taken in proper and moderate doses, and applied to a healthy stomach, will not produce a very stimulating effect on this organ, whilst on the contrary, their action is principally spent on other organs with which they have affinity. Thus mercury will occasion irritation of the salivary glands, ergot give rise to active contraction of the uterus, aloes to an irritation of the lower end of the rectum, and cantharides of the neck of the bladder; whilst the stomach which has received the first impression of these substances, remains in many instances undisturbed. The same may be said of the whole class of diuretics, among which balsam copaiba is enumerated; for unless the stomach and bowels be inordinately irritated and the dose too large, they will produce their effects on the urinary apparatus, and the digestive organs will remain unaffected. It may be asked however, granting the correctness of the present hypothesis, how does balsam copaiba get to the urinary organs, in order to produce there an action revulsive of that in the lungs? Many, perhaps, will maintain that it is by virtue of a double sympathy;—the balsam acting first on the stomach, from thence sympathetically on the urinary apparatus, and from these again on the lungs. To me it appears, however, that this opinion is gratuitous, since we can explain the fact in a more easy and rational way. Experiments the most diversified, and conducted by many of the most intelligent and skilful physiologists, have proved beyond the possibility of doubt, that many medicines enter the circulation, and are in this way carried to the various organs with which they have affinity. It is more than probable, therefore, that the remedy under consideration, follows this route, and is conveyed, by means of the circulating vessels, to the urinary organs, on which it produces the desired action.

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* Annales de la Médecine Physiologique. T. 6. p. 38.

Be this, however, as it may, the preceding remarks have been thrown out merely as desultory hints towards an explanation of the modus operandi of the copaiba; and I would certainly not wish to be understood as stating, that in my opinion, it acts beneficially in chronic bronchitis *only* in virtue of this revulsive action on the urinary organs. So far from this, I am inclined to the belief, that, in the present state of our knowledge, it is much more philosophical to abandon all exclusive views of this subject, and attribute the effect of this remedy to a combined operation on the stomach, and on the eliminating organs;—in fact, to admit, to a certain extent, *all* the opinions I have alluded to above; but which want of space, and the fear of abusing the patience of the reader, have prevented me from examining in detail.

In an early part of this essay I have taken occasion to remark, that in the administration of the copaiba in chronic bronchitis, some circumstances should be carefully attended to, which but few of the writers who have spoken of the use of the remedy, in the present or any other disease, seem to have noticed. I allude more particularly to the state of the general system, and of the surface on which it is applied. This is a subject of the utmost importance, and which should never be lost sight of by the physician. Indeed the secondary effects of remedies are so greatly modified by the condition of the organs which receive the primary impression, that every practitioner must have noticed cases, in which, from want of proper attention to this circumstance, effects diametrically opposed to those intended have resulted from the administration of remedies. As regards the copaiba, administered during a febrile condition of the system, the force of the circulation is directed towards the skin, whilst the depurative action of the kidneys is diminished. In consequence of this, the remedy, remaining in the circulation, is productive of irritation in all the organs to which it penetrates, and unless carried off by the bowels, aggravates the febrile excitement as well as the disease for which it was prescribed. Care should be taken, therefore, to select such cases as are free from fever, or at least such periods of the disease when the irritation of the heart and blood-vessels subsides, and the apyrexia becomes complete. Nor is this the only circumstance to be attended to, in administering the copaiba; in order to ensure its complete success, the stomach and bowels must be in a healthy state, and free from irritation. Should this be lost sight of, this latter state, indicated by redness of the tongue, thirst, tenderness of the epigastrium, &c. will serve to counteract its beneficial influence. In such cases the gastric irritation becomes aggravated, as manifested by nausea, vomiting, pain, and even a febrile excitement. Should the bowels be in like manner irritated, pain, purging, and tenesmus, may be, and often have been, the consequence of the employment of the remedy. The copaiba being still persevered in, the irritation not abating, and in consequence, the connexion which in a healthy state exists between the stomach and kidneys diminishing, the bronchial affection becomes aggravated, as manifested by an increase of cough and expectoration;—effects which arise from a reflection of the irritation from the stomach to the bronchia, as well as from a defective elimination of the particles of the copaiba. "It is thus," says a judicious writer, "that physiology, and a perfect knowledge of the condition of all the organs, must always guide the physician in the application of therapeutical agents."—(BEGIN, Therapeutique, p. 498.)

It is true, that when, under the use of the copaiba, nausea is occasioned, this symptom may sometimes, as Dr. ARMSTRONG has noticed, be obviated by combining with the remedy some aromatic water, and that when it purges too actively, paregoric may be had recourse to with advantage; but this I have generally found to take place only in such instances in which the nausea and purging arise from natural irritability of the stomach and bowels, and not from irritation of their mucous coats. Under the latter circumstances it will be found much preferable to discontinue the remedy, and to use means calculated to relieve the morbid condition of the affected organs. A gentle emetic of ipecacuanha, or a dose of castor oil, when the nausea or purging arises from the presence of irritating bile in these organs, will be found advantageous. When, on the contrary, these symptoms depend on irritation of the lining coat of the stomach or intestinal canal, mild mucilaginous and diluent drinks, enemata, leeches to the epigastrium or anus, and abstinence from food, will be prescribed with the happiest results. As soon as by these means the irritation is subdued, the copaiba may again be resorted to, (in smaller doses, however, than when discontinued,) whilst the condition of the digestive organs must be carefully watched. When, notwithstanding a due regard to these precautionary means, however, the balsam copaiba produces the symptoms we have just enumerated, it must be laid aside. BEGIN recommends that balsamic remedies should not be given for a long period, and that their use should be discontinued for a short time, in order that the stomach and bowels should recover from the stimulation they necessarily suffer, and regain their susceptibility. This recommendation cannot be too strongly enforced on the mind of young practitioners; as by attending to it we obviate the necessity of administering these substances in enormous and sometimes dangerous doses; and from what I have seen, we ensure their beneficial effects.

Under the use of this remedy, the urinary secretion will be found, in some cases, though not in all, increased; it will acquire a peculiar smell and colour, and in the majority of instances, the cough will at the same time be observed to diminish, as also the expectoration, which will gradually assume a more healthy appearance. It could only be from a want of discrimination of the cases in which the balsam copaiba was likely to be of benefit, and from his inexperience with this remedy, that Dr. FOTHERGILL could have been induced to condemn, in the most positive terms, its use in phthisis, and to declare, that a medicine so pungent and heating cannot be supposed safe, much less beneficial in a disease that requires a very different treatment:*—an opinion which Dr. DUNCAN informs us has of late been very generally adopted. It will appear also to every one, that the anathema pronounced upon balsamic remedies by CULLEN, though more especially by his learned commentator BOSQUILLON, BONNAFOX, DEMALET, BRIEUDE, PORTAL, and at a more recent period by BROUSSAIS, BEGIN, and LASSERRE, refer more particularly to their employment in genuine phthisis pulmonalis and laryngea, and not in that variety of the disease here principally referred to,

The copaiba, as Dr. ARMSTRONG has very well observed, produces also, sometimes, an itching or eruption on the skin, which gives relief to the cough. Instances of this kind have often been noticed in this city, and have sometimes necessitated the discontinuance of the medicine. It will be found at times that costiveness supervenes during the administration of the balsam. This more particularly happens in those cases in which laudanum, or other preparations of opium, are given to procure sleep, or quiet purgative effects. In these instances reliance should be placed on enemata, castor oil, or magnesia, but more particularly on sulphur, which Dr. PHYSICK has used extensively in this complaint, and with the happiest results. By Dr. ARMSTRONG also, this medicine is spoken of in terms of high commendation. "The older chemists," he remarks, "called sulphur the balsam of the lungs, from the then current opinion of its efficacy; and when we consider that it has a specific action on the skin, we cannot be surprised it should sometimes be very useful."

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* Medical Observations and Enquiries, vol. 4. p. 240.

On the subject of the diet to which the patient should be restricted during the administration of this remedy, and particularly when an undue degree of irritability exists in the digestive organs, I need not enter at large, as it is familiar to every practitioner. I must be allowed to remark, however, that when the stomach of the patient will bear it, I am very partial to a milk diet; having witnessed many instances in which it proved very beneficial in pulmonary and other complaints. I shall, on a future occasion, lay these cases before the readers of this journal, and now proceed to detail a few of those in which I have found the balsam of advantage in mucous inflammation of the lungs.

CASE 1st. Christina P., aged about 18 years, was attacked, towards the end of September, 1821, whilst in the country, with the characteristic symptoms of inflammation of the lining membrane of the lungs. She was bled, vomited, and purged by the physician of the place, and kept on a strict antiphlogistic regimen. About two weeks after her first attack, she was removed to the city, and placed under my direction. At the first visit she presented the following discouraging symptoms: violent cough, which was particularly troublesome during the night, and accompanied with a copious expectoration of matter of a dark yellowish-green colour and unpleasant smell, and sinking in water. She was moreover labouring under fever, characterized by a pulse beating 120 strokes in the minute—hot skin, especially of the palms of the hands—hectic flushes, night sweats, &c. &c. She was ordered the usual remedies, with demulcent drinks, mild anodynes at night, and a blister to the chest. After continuing a few days under this treatment, she was suddenly attacked with hæmoptysis, and her fever acquired intensity. For these symptoms she was bled to the amount of 10 ounces, ordered 15 drops of tincture of digitalis, three times a day, and the blister was kept in a state of suppuration. From these means she experienced some relief; the spitting of blood was arrested, and the condition of her pulse and skin improved. Finding, however, that her cough and expectoration continued as before, together with her nocturnal febrile excitement, and observing, moreover, that there existed no sign of irritation of the stomach, she was ordered to take a table-spoonful of balsam copaiba mixture three times a day. Under the use of this medicine and of the digitalis, the nocturnal febrile symptoms amended, the expectoration improved, and the appetite gradually returned. She was then put under the use of a small quantity of milk for diet, and the mixture was continued. By persevering in the use of these means, she derived such manifest benefit, that after a few weeks, she was in a fit condition to be allowed a more substantial diet, and to be permitted to visit her parents in the country, whence, after a few months, she returned in apparent good health, and free from cough, expectoration, or fever. She now enjoys good health, is married, and has borne children.

Remarks.—This case, the first of this disease in which I had employed the copaiba, was well calculated to make a strong impression on my mind, and to induce me to have recourse to it on the first favourable occasion that should present itself to my observation. I accordingly soon did so in a case of confirmed phthisis; for which I was consulted, not with a view of curing the patient, for the disease had already progressed too far to allow me to anticipate a recovery, but of relieving her troublesome cough, and copious expectoration. Nor was I disappointed in my expectation; the cough was in some measure relieved, but in the course of a few months the patient sunk to the grave. The same effects have subsequently been derived in many similar cases, from the same remedy; but yet I am far from wishing to inculcate the idea, that in most cases of confirmed phthisis of either kind admitted by nosologists, the copaiba will be found an effectual and useful remedy, or even a palliative; for I am too well aware, that this disease is, in very many cases, accompanied with symptoms indicating irritation and even inflammation of the stomach and bowels, and with general fever, which, as we have seen, contraindicate the use of the remedy.

Case 2nd. Mrs. P., an old lady, about 65 years of age, and who has been subject for many years to frequent attacks of bronchitis, supervening on a chronic state of the same disease, was taken, in November, 1823, with high febrile excitement, violent cough, dull pain about the chest, a little oppression, headach, thirst, foul tongue, nausea, &c. The state of her pulse seeming to forbid the use of the lancet, she was puked with ipecacuanha, her bowels were opened with senna and manna, she was kept on low diet, and under the influence of small and repeated doses of antimony. After a few days her fever abated, but the cough continued very troublesome, and expectoration very copious, yellow, thick, and opaque. Small nauseating doses of ipecacuanha, opiates at night, and tartar emetic ointment to the chest, which were now resorted to, seemed to produce a beneficial effect, and were persevered in for some time. Finding, however, that her cough and expectoration were still troublesome, and as her tongue was now perfectly clean, moist, and rather pale, and her digestive organs in a natural condition, she was ordered 25 drops of balsam copaiba, in a wine-glassful of cold chamomile tea, three times a day. She continued under the use of this remedy during four weeks; increasing the dose gradually to 40 drops, and adding occasionally a few drops of laudanum, to prevent catharsis. She was at the same time recommended a strict milk diet, and at the end of the period before mentioned, I had the satisfaction of finding that all her unpleasant symptoms had disappeared. She continued to enjoy perfect health for several months after; since which time I have lost sight of her. When I last saw her, she unhesitatingly informed me that she was better than she had been for a long time before, and attributed her cure to the balsam.

Remarks.—I am perfectly aware, that by many I shall be accused of attributing, perhaps, too great an agency, in the happy termination of this case, to the copaiba; and that the external revulsive application, together with the other remedies and the abstinence, might have been sufficient to effect the cure, without the aid of this medicine. Admitting, however, that this *might* have occurred, would we not be warranted, by a parity of reasoning, in calling in question the real efficacy of every article of the materia medica; since few are used *alone*, and without the assistance of others. But it may be remarked, that the subject of the present observation had been affected before with similar symptoms, and that, although treated by means of the same remedies to which I had recourse, the copaiba excepted, she had retained her cough for a number of months or even years. When this remedy was commenced, the cough was very troublesome, and expectoration very copious; and in a very few days a change for the better was noticed. From which I must be allowed to believe that we may, without impropriety, attribute to the copaiba some agency in the cure.

In this case, the urinary secretion was not much affected in respect to quantity; but a good deal so in smell and appearance.

Case 3d. Mrs. Lay, aged 73 years, was attacked, a few weeks after the recovery of the preceding patient, with all the characteristic symptoms of inflammation of the mucous tissue of the lungs, violent cough, sense of oppression, dull pain in the chest, hot skin, &c. The pulse being tense, venesection was had recourse to twice in the first 24 hours; after which a blister was applied over the chest.

In the course of the treatment she was ordered small doses of antimonial preparations, and occasionally purged with castor oil. By means of these remedies much benefit was obtained; her oppression and pain gradually disappeared, and her pulse, skin, and digestive organs, returned to their natural state. The cough continuing, however, and the expectoration being very copious, thick, opaque, and yellow, the remedies usually employed on such occasions were used several weeks, without effect: balsam copaiba was therefore substituted, and administered in an emulsion, in doses of 25 drops three times a day. Under the use of this medicine, the unpleasant symptoms gradually diminished, and at the end of less than a month had totally disappeared. Shortly after, however, Mrs. D. was attacked with all the symptoms of softening of the brain, which in a few days, terminated fatally.

Remarks.—It is evident that in this case, notwithstanding its termination, the balsam copaiba was beneficial; since, under its use, the symptoms for which it was prescribed were entirely removed. The cephalic attack, from all appearances, was unconnected with the primary disease, and could not arise from the action of the copaiba.

Case 4th. Isabella S——, about 25 years of age, of a lymphatic and bilious temperament, and subject for some time to frequent *colds*, was attacked in December, 1823, with the usual symptoms of catarrhal fever; hot skin, frequent pulse, headach, attended with fulness and pain in the chest, and harassing cough. She was bled, puked with ipecacuanha, ordered antimonials in small and repeated doses, and demulcent drinks, and placed on a strict antiphlogistic diet. In a few days, the most urgent symptoms had in great measure subsided, but the pain and cough continuing troublesome, a blister was ordered to the chest, antimonials continued, and occasional doses of castor oil administered. This plan of treatment was persevered in for some time; when the fever diminished through the day, and only appeared towards night, attended with hot skin, quick pulse, and perspiration towards morning. The cough, however, still continued,—was especially violent towards morning, and the expectoration was copious, thick, yellow, opaque, and at times of a greenish tinge.

Thinking that this opportunity was favourable for the administration of the copaiba, it was prescribed in doses of 25 drops three times a day, in a wine-glassful of milk, to be increased five drops each dose every third day, unless it produced irritation of the stomach, as indicated by nausea, pain, thirst, &c. Under the use of this remedy, occasional anodynes, and a mild diet, the cough and expectoration gradually disappeared, and in the course of a few months the girl recovered. She now enjoys good health.

Case 5th. Sarah Morgan, aged 9 years, of a lymphatic temperament, narrow chest, and who had laboured a few months before under an attack of bronchitis, was taken in November, 1824, with fever, loss of appetite, cough, very copious expectoration of white, thick matter, not attended, however, with pain in the chest. She emaciated very rapidly; her skin became hot; her cheeks were flushed, especially at night; pulse much accelerated. In the course of ten or twelve days, she was puked several times with ipecacuanha, purged with castor oil, ordered small doses of antimonial wine, and kept on low diet. Under this plan of treatment she seemed to improve; the fever subsided, and no other symptoms appeared to remain, with the exception of her cough and copious expectoration. Mild tonics were now administered, and anodynes given at night to allay irritation; but under the use of these remedies the symptoms were aggravated, her pulse once more became accelerated, her skin hot, and the expectoration insensibly acquired a fœtid smell and greenish tinge. It was now evident that the tonic plan, so far from being beneficial, had aggravated the irritation of the lungs. It was in consequence laid aside. Antimonial wine was once more resorted to, and a blister applied to her chest. After a few days, the irritation of the system was calmed, but the cough and expectoration remained unabated. Under these circumstances she was put under the use of balsam copaiba, in doses of six drops three times a day, and anodynes were given at night to procure sleep. By persevering in the use of this remedy, and of a diet consisting of milk diluted with barley water, and a small portion of stale bread, Miss Morgan recovered perfectly in the course of six weeks. She had the benefit of the advice of Dr. PHYSICK, who at my suggestion was requested to attend in consultation.

The following case I owe to the politeness of my friend Dr. MONGES, of this city, a physician as distinguished for his extensive experience and practical accuracy, as for the rectitude of his judgment and his polished manners.

Mr. Roberts, aged 22 years, of a lymphatic temperament, and who had lost two brothers with phthisis pulmonalis, was attacked a few years ago with the usual symptoms of catarrh, which were soon so aggravated as to threaten him with consumption;—the cough having become dry and harassing, and the fever gradually more intense and continual. For these Mr. R. was bled several times; cups, leeches, and blisters were in succession applied to the chest, and occasional emetics prescribed. This plan was persevered in for three weeks, when finding that Mr. R. was not benefited by it, and that his disease was assuming the same march as that which had proved fatal to his brothers, I resorted to mercury, in order if possible to arrest its progress. The gums soon became affected, and the salivation was kept up for six weeks. But from this powerful revulsive no benefit resulted. So far from this, indeed, the symptoms were much aggravated. The pulse was now 120 in a minute;—the skin dry;—cough frequent;—expectoration very copious. Night sweats soon supervened; the lower extremities became œdematous, the debility extreme, and exercise occasioned difficulty of breathing. Under these circumstances Mr. Roberts was sent to the country, where he remained all summer, taking gum arabic and milk for nourishment, occasional purgatives, antimonial preparations, and squill. When he returned from the country he appeared worse, the fever had assumed the hectic character, the nocturnal sweats were more copious, his debility was greater than when he had left the city, and his features were so much altered that I did not recognise him. Milk was now discontinued, and nourishing food ordered; balsam copaiba in large doses was administered, and its cathartic effects prevented by opiates. This remedy had hardly been used two weeks, before the symptoms were in a great measure amended. The cough was better, the expectoration improved in appearance, the nocturnal fevers less severe, and the sweats less copious. The balsam was continued three months, when a cure was effected. At my suggestion young Roberts abandoned the sedentary business of silversmith, which until that period he had followed, and adopted the active life of a farmer. Three years have now elapsed since Mr. Roberts's first attack, and although he has suffered from intermittent fever, and last spring from the influenza, his health is as good, and perhaps better, than before the severe attack in question.

Remarks.—It must be evident to every one, that in this, as well as in the two preceding cases, the balsam copaiba was of the most decided benefit; as it put a stop to an irritation of the mucous membrane of the lungs, which had it been allowed to continue much longer, might, owing to the predisposition of the patients arising from their temperaments, have occasioned the formation of tubercles and ended in phthisis. For it is a well established fact, that tubercles are in almost all cases the result of neglected inflammations of this membrane.

Case 7th. J. E., about thirty-five years of age, of a strong constitution, and bilious temperament, and by profession a mariner, was taken, whilst on the coast, with the usual symptoms of pulmonary inflammation. For the first four days, little or nothing was done to remove the disease; so that when he came under care, (Feb. 1826,) I entertained fears lest the inflammation had already progressed too far to be arrested. The pain was very considerable, the pulse strong and full, the oppression great, the cough almost continuous, and expectoration bloody. To remove these symptoms, the lancet was very freely and repeatedly had recourse to, warm cataplasms applied to the painful part, antimonials administered, &c. and the lowest possible diet enjoined. After a few days, the force of the attack appearing somewhat lessened by these means, a blister was applied to the chest, the antimonials continued, and occasional cathartics prescribed. This plan being persevered in for some weeks, the heat of the skin abated; but still the pulse was quick, particularly at night, the pleuritic pain was not entirely removed, and the cough was troublesome, and attended with a copious expectoration of yellow or greenish matter. Swelling of the feet and face supervened, and upon the whole, the case appeared a very unpromising one.

The gastro-enteric apparatus, however, appearing in good condition, as indicated by clean tongue, appetite, no thirst, and regular bowels, the balsam copaiba was prescribed in the usual way; opiates were given to procure sleep; and, to obviate the extreme debility of the patient, milk and barley water, with a small portion of toasted bread, was allowed twice a day. Tartar emetic ointment was likewise ordered to be rubbed on the chest, to remove the pain remaining there; and produced a small crop of pustules.

Under this plan of treatment the patient continued about five weeks, and at the expiration of that time was considered so much improved in all respects, as to be allowed to use a more nourishing diet. The pain being still somewhat troublesome, external revulsives, and the balsam, were advised to be continued, and in a very short time succeeded in removing all traces of the disease. J. E. has since left this country in perfect health.

Remarks.—Although in the treatment of this case, I did not avail myself of the aid of the stethoscope, I think it may be affirmed, that I had to combat a conjoint inflammation of the pleura and of the mucous lining of the lungs; which, not having been arrested in the outset, had passed to a chronic state, and would, unless interfered with by proper means, have conducted the patient to the grave, with the usual symptoms of phthisis pulmonalis. Indeed so unfavourable was my diagnosis of the case, that I requested one of my most experienced medical friends to visit him once or twice with me, and his opinion corroborated mine, as to the precarious situation of the patient:—so true it is, that physicians are very apt to be mistaken in their predictions respecting the issue of the most desperate case. Whether or not my opinion will be supported by that of my practical readers, I am disposed to attribute a considerable agency in this cure to the copaiba; as the benefit seemed to succeed closely its exhibition, and the case seemed closely allied, in all that relates to the mucous inflammation, to some others in which there could be no hesitation as regards the efficacy of this remedy. I would not, however, be thought to overlook the aid that was derived from the tartar emetic ointment. To it, indeed, we must refer the removal of the pleuritic irritation.

Other cases might be adduced in confirmation of the advantage that may be derived from a judicious use of balsam copaiba in chronic inflammation of the mucous membrane of the lungs; but the fear of fatiguing the readers of this journal, and extending, beyond proper limits, this already long article, compels me to restrict myself to these I have detailed. On some future occasion I shall resume the subject of this remedy, and offer some observations on its use in affections of the other portions of the same membrane.

ARTICLE IV.—*On Infantile Convulsions arising from Spasm of the Intestines.* By Jos. Parrish, M. D., one of the Surgeons of the Pennsylvania Hospital, &c. &c.

Among the disagreeable effects produced by intestinal irritation in infants, is a species of convulsion resembling the epileptic fit in appearance, but materially differing from the ordinary form of that disease, both in its origin, and the mode of treatment which it demands. A character by which it may, in most instances, be readily distinguished from genuine epilepsy, is the total absence of stupor, after the cessation of the convulsions. Instead of remaining, for some time, in a comatose state, the child, upon recovering from the fit, immediately becomes entirely sensible, and looks as though nothing had happened. The attacks are generally sudden and of short continuance, and in the beginning are seldom frequent. Sometimes two or more will take place in quick succession; and days, and even weeks will elapse before the return of the convulsions. If not arrested, however, they become more frequent; and, at length, the nervous system is rendered so excessively irritable, that an almost constant convulsive action is kept up, till the tender frame of the infant becomes exhausted, and sinks under the disease. So far, however, as I have seen, the affection generally yields to proper treatment; and a relapse may be prevented by attention to the diet, and the state of the bowels. The infant is usually attacked within the year; and if it survive the period of dentition, may be considered safe.

That the primary affection is seated in the bowels, and consists of spasm of its muscular coat, is evinced by the symptoms which are presented in the intervals of the convulsions. The child often screams out suddenly, throws itself back, and stiffens its body, exactly as in an attack of flatulent colic; and the comparative ease which it regains in a few minutes, proves the affection to have been spasmodic. Even when the pain is less severe, the peculiar motions and complaints of the infant are such, as experienced mothers and nurses immediately attribute to uneasiness in the cavity of the abdomen. The relief which sometimes follows discharges of flatus, is another proof, if more were wanting, of the nature of the complaint. Indeed the extrication of air in the bowels is often very abundant; so much so that the abdomen swells, and even becomes tympanitic. The nature of the discharges also indicates disorder in the alimentary canal; and the existence of acidity is frequently manifested, as well by the sourness of the breath, as by the smell and appearance of the stools. It is of the utmost importance to observe accurately these symptoms of abdominal affection; as they both enable us to form a correct view of the nature of the convulsions, and at the same time point out the course of treatment proper for their removal.

In a case which fell under my care, in the year 1821, and which unfortunately proved fatal, I had an opportunity of verifying my views of the nature of the disease by dissection. The subject of the attack was an infant about five months old. The convulsions came on instantaneously, without the least warning; and, immediately after they had passed, the patient was quite sensible, and sometimes even playful. At first, several days intervened between the fits; and, contrary to the general rule, they came on at one stated time, about or a little after day-break. They afterwards became more frequent and distressing; and towards the close of the case, severe spasms or partial convulsions occurred in the intervals, the child screaming out, and appearing to be in much pain. The treatment was principally directed to the bowels; but leeches were twice applied to the head, and blisters were placed behind the ears. Though relief was occasionally obtained, yet no permanent impression was produced upon the disease; and, notwithstanding all my efforts, the little sufferer expired. Upon dissection, the bowels exhibited strong evidence of having been under the influence of severe spasm. More than half of the small intestines were irregularly contracted. In some places, for more than an inch in extent, the bowel was reduced to the size of a goose-quill: in others it appeared as if tied by a thread, its calibre being almost obliterated. The omentum was closely folded up, in the form of a thick twine or small rope, and lay on the arch of the colon. In the gall-bladder was a light-coloured and glairy fluid. No other sign of disease was visible in the cavity of the abdomen, or in the thorax. The condition of the brain I did not examine; as I thought sufficient evidence of the cause of death was afforded by the appearance of the bowels.

Though, from the symptoms during life, and the phenomena presented by dissection, I am inclined to attribute these convulsions to intestinal spasm, yet there can be no doubt that difficult dentition greatly aggravates the disorder. This it does, in all probability, more by its influence upon the bowels, than by its direct operation upon the brain and nerves. Inflammation of the gums in infants, is exceedingly apt to produce irritation in the alimentary canal; and by giving rise to spasm in this part, or aggravating it if already existing, may either serve as a remote cause of the convulsions, or may render them more severe and more difficult to cure. I do not, however, deny that dentition, like any other source of irritation, may produce convulsions by directly operating upon the cerebral system. We undoubtedly meet with instances of the kind; but the symptoms, in these cases, are materially different from those of the disease under consideration. The attacks are less frequent in their occurrence, are accompanied with greater arterial excitement, and generally exhibit more obvious symptoms of disordered action in the brain.

In the treatment of convulsions from intestinal spasm, we are presented with two obvious indications: namely, to relax the spasm, and to remove those sources of irritation from which it arises. I shall proceed to detail the remedies which I have found most effectual for both purposes. Of those calculated to relax spasm, blood-letting is one of the most important. Though not called for by the condition of the pulse, nor by the existence of any inflammatory action, it sometimes affords great relief, and is useful also by preparing the system for the administration of the antispasmodics. General bleeding is preferable to leeching, as it produces a more prompt and decided impression: but the local abstraction of blood may be resorted to with advantage, when the constitution of the child is delicate, and there is reason to apprehend excessive debility from the use of the lancet.

Another important relaxing remedy is the warm bath. This may be used advantageously during the fit, when its duration is more than usually protracted, or the convulsions are uncommonly severe.

But the means upon which I place most reliance are the antispasmodic medicines. Of these I prefer the assafœtida, given very freely, in the shape of emulsion, both internally and by the rectum. In either way it may often be advantageously combined with a little laudanum; especially when, in the intervals of the convulsions, the infant screams much and appears to be in pain. According to the age of the child, from two to five grains of the gum-resin may be given every two hours; and when laudanum is adviseable, one or two drops may be added to each dose. In the form of enema, from 10 to 20 grains should be administered at once, and repeated more or less frequently, according to circumstances. Sometimes the assafœtida cannot be retained on the stomach; and its very frequent use in the way of injection may produce unpleasant irritation of the rectum. Under these circumstances, the rectified oil of amber may be usefully employed as a substitute; and I have sometimes derived advantage from alternating this medicine with the assafœtida. I prescribe it in the dose of from two to five drops, rubbed up with gum arabic, loaf sugar, and cinnamon water. Should the case resist the influence of these antispasmodics, or should they lose their effect upon repetition, the musk julap may be resorted to. In more than one very severe case I have employed it with the most manifest advantage. The proper dose is from half a grain to one grain, every hour or two hours, during the greatest violence of the symptoms. If there should be much pain, laudanum should be combined with the oil of amber or musk, as before recommended with the assafœtida. Sometimes more effectual relief will be afforded by the laudanum in the form of anodyne injection; especially when the stomach is irritable. From four to eight drops may be given in this way, and repeated when called for by the symptoms.

At the same time that these remedies are administered internally for the relaxation of the spasm, the use of external measures, for the same purpose, should not be neglected. In most of the spasmodic complaints of infants, I recommend the application, along the spine, and over the parts more especially affected, of a liniment composed of oil of amber and laudanum, diluted with equal parts of olive oil and brandy.* In the complaint under consideration, decided advantage may be expected from freely bathing the back and abdomen with this liniment. Garlic and brandy, employed in the same way, is also a useful application. In severe cases, the abdomen should be covered with a large blister.

But while we are thus endeavouring to overcome the spasmodic action of the intestines, we should not overlook those sources of irritation, which, if they do not give rise to it, at least render it more severe and obstinate. In the very commencement of the treatment, the contents of the intestines should be freely evacuated; and, throughout the case, accumulations of feculent matters or acrid secretions should be prevented, by the use of castor oil, magnesia, or some other gentle cathartic.

As, in almost every instance, there is more or less acid in the stomach and bowels, the frequent administration of alkaline medicines will be found highly useful. I am much in the habit of prescribing the alkaline infusion, prepared according to the formula of Dr. Physick, from hickory ashes and soot. When symptoms of acidity present themselves, this preparation, diluted so as to suit the palate of the infant, may be given in the dose of a teaspoonful every two or three hours, in alternation with the antispasmodic medicine which may be in use at the time.

The accumulation of flatus has been mentioned as a troublesome attendant of the complaint. This symptom is often greatly relieved by the antispasmodics before recommended: but sometimes it resists all internal remedies, and the intestines become so much distended with air, as to be rendered almost incapable of their usual peristaltic action. The removal of so powerful a cause of irritation is absolutely necessary for the preservation of life. For this purpose I generally employ the dry syringe; by which the air may sometimes be readily abstracted, and the abdomen reduced to its natural size. In a case which I attended in consultation with Dr. Wood, and in which the infant was brought to the lowest possible condition, short of dissolution, the happiest effects resulted from the use of this instrument. The tympanitic state of the bowels was immediately relieved, opportunity for the continued action of the proper remedies was thus afforded, and the life of the child preserved.*

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* The proportions which I generally employ are, of the oil of amber and laudanum, each, a tea-spoonful; of the olive oil and brandy, each a table-spoonful.

Another object of attention, so obvious as hardly to deserve particular notice, is the condition of the gums. These, if inflamed, should be freely lanced, and the operation repeated whenever the wounds heal, so long as the continuance of the inflammation may render it adviseable. As recommended in a former communication, on the subject of cholera, blisters should be applied behind the ears, and kept open by stimulating dressings. In one instance of dangerous convulsions, in which the intestinal disorder appeared to be aggravated, if not altogether maintained, by severe and obstinate inflammation of the gums, great relief was obtained by the application of leeches to the cheeks. The soreness and tumefaction of the gums, which had been excessive, abated almost immediately; the affection of the bowels gave way before the remedies which it had previously resisted; and the convulsions disappeared with the cause upon which they depended.

I will close this account of the treatment by a few observations on the subject of diet. It is manifestly necessary that all articles of food which have a tendency to produce flatulence, or otherwise irritate the bowels, should be carefully avoided. The farinaceous articles, and animal food of easy digestion, are suitable; and the breast may be allowed when the nurse or mother is perfectly healthy. Sometimes the constitution of the mother is such, that her milk disagrees with the infant; and, when this can be ascertained, or is strongly suspected, it is proper that a healthy wet-nurse should be procured as a substitute. In a respectable family of this city, I was called successively to two of the infant children, affected with convulsions from intestinal spasm, of whom the first recovered, but the second died. Having some reason to attribute the complaint to the milk of the mother, I advised that, upon the birth of a third child, a wet-nurse should be immediately provided. My advice was attended to, and the next infant entirely escaped the disorder. In all cases, when the child is allowed to take the breast, the mother should be directed to regulate her diet, and to avoid especially all acescent and flatulent food.

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* Sometimes the simple introduction of the point of the tube up the rectum answers the purpose; the air escaping by its own elasticity. Sometimes it is necessary to exhaust the air by repeatedly withdrawing the piston of the syringe, and thus creating a vacuum in the body of the instrument, which can be supplied only by the flatus from the bowels. Relief, however, cannot always be obtained in this way.

In illustration of the preceding statements, and in order to present, in one view, a connected account of the symptoms and treatment, I will give the details of a very interesting case, which occurred to me in the year 1818.

Case.—The subject of this note was a remarkably fine boy, aged about nine months. Before I saw him he had been affected with several convulsions, which came on suddenly, and were of short continuance. After one of these attacks he was brought to my house. Finding his gums inflamed and his bowels constipated, I lanced the former, and directed the latter to be freely opened. I also directed the lac assafœtidæ to be given internally, and the spine to be bathed with garlic and brandy. Shortly afterwards I was called to see him in the night, in consequence of his having two violent convulsions in pretty quick succession. I found him with a cool skin, and a blue appearance about the mouth; but evidently with a clear intellect. Almost immediately upon coming out of a fit, he appeared to know those to whom he had been accustomed. As his pulse was somewhat tense, I bled him freely, so much so, indeed, that he fainted under the operation. Soon after his revival, he was attacked with another fit, which, on his being put into the warm bath, subsided in two minutes. Upon administering some lac assafœtidæ, I observed the escape of flatus from the stomach; and that the child suffered great pain, was manifested by his stiffening himself, and screaming very frequently. I therefore gave him an enema of assafœtida with nine drops of laudanum; and upon leaving the house directed, that if this should not afford relief, one drop of laudanum with a little assafœtida should be administered every two hours, till he should become easy. I also recommended that a large spice plaster should be placed upon the abdomen. The subsequent part of the night was passed more comfortably: but about day-break he had another convulsion, which was said to be more violent than any of the preceding. He was again put into the warm bath; and a medical friend, who remained with him during the night, gave him a mixture consisting of one drop of laudanum, four drops of the spirits of hartshorn, and a little magnesia, and applied a pair of blisters to his legs. In the morning, I again saw him, and being impressed with the conviction that much of the mischief depended upon acid in the stomach and bowels, I directed a tea-spoonful of the alkaline infusion to be given every two hours, and the mixture above mentioned to be repeated at the same interval, if the child should be in pain. Under this treatment, united with the external application of oil of amber along the spine, and of laudanum and brandy to the abdomen, he passed the day with more comfort, not having to take the laudanum oftener than two or three times. On repeating my visit I was encouraged by finding that his skin was becoming warm, and his face somewhat flushed. These symptoms were favourable, as they indicated a determination from the internal organs, towards the skin. On the morning of the following day, I was sent for early. One slight convulsion had occurred about midnight; and from his restlessness, another was apprehended. I watched him closely, and listened to his language; for infants have a language, and happy is the physician who has studied and understands it. I thought I could gather from his mode of expression, that the pain had left his bowels; but that he was very uncomfortable and thirsty, and that a little cold water would afford great relief. I accordingly gave him some. He took it with avidity, appeared to be refreshed, and in a short time sunk into a pleasant sleep, which continued most of the morning. In the afternoon he again became uneasy and fretful, with his skin warm, and his face flushed. The cool water was renewed; and as the air appeared to refresh him, I directed that he should be carried out into the yard, where he soon fell asleep. I mention these facts to illustrate the importance of attending to the signs by which infants express their wants. Much suffering, and perhaps some aggravation of the disease, were in this instance avoided by the very simple remedies of fresh air, and a little cool water. During the day, his gums were lanced, and he took a dose of castor oil. The night was passed comfortably, and without convulsions. Next day, however, he was repeatedly threatened with them, and I found it necessary to administer some powerful antispasmodic. The musk julap was preferred. A dose of this, containing rather less than a grain of the musk, was several times repeated, with very great success. In addition, the bowels were opened by an injection of oil with fennel-seed tea, a spice plaster was placed over the abdomen, and the liniments before mentioned were freely applied. By these means the threatening symptoms were removed, and convulsions warded off; nor did he afterwards experience an attack. Throughout the case the breast had been denied him; as the mind of the mother was greatly agitated, and I feared that, on this account, her milk might prove injurious. But as she was now more composed, and as she had for several days confined herself to a strict animal diet, I allowed her again to suckle the child; nor did any unpleasant effects result. Two of the other children were, about this time, attacked with catarrhal fever; and I was exceedingly alarmed at finding my little patient, after having already suffered so much, seized with violent symptoms of the same disease. It came on him with a chill, which was succeeded by a hot skin, an active pulse, and extreme difficulty of breathing. I do not know that I have ever witnessed a case more alarming and apparently dangerous. Much relief, however, was procured by bleeding and an emetic of ipecacuanha. A purge of calomel was afterwards given, followed by small doses of the sweet spirits of nitre and antimonial wine. By the occasional use of the warm bath, by bathing the abdomen with laudanum and brandy, and by strict attention to the state of the bowels, we endeavoured to counteract any disposition which might exist to a return of the convulsions. Under this treatment the child gradually improved, and in the end completely recovered.

It must be evident from the above details, that a proper diagnosis of this disease is of the utmost importance; and that treatment founded upon the idea that the brain is the part principally affected, will in all probability eventuate in failure. It is also important to understand that these convulsions may occur in infants predisposed to them, during the continuance of another disease: the usual remedies for which will by the new state of things be rendered highly injurious. A case illustrative of this fact occurred to me in the year 1822. The infant was attacked with croup, for which I prescribed the ordinary remedies; such as bleeding, a blister to the throat, calomel, antimonial wine, seneca, &c. Under this treatment the symptoms of the disease had begun to subside, when the child was suddenly seized with severe convulsions. Evident signs of pain in the abdomen were presented; and the state of the stools indicated the existence of acid in the bowels. I was convinced that the convulsions had their origin in intestinal spasm, and, under this impression, immediately laid aside the internal remedies I had prescribed for the croup. In their place I directed the lac assafœtidæ, both by the mouth and rectum, the alkaline infusion, and the warm bath. The back and abdomen were frequently bathed with the liniment of oil of amber, laudanum, &c.; and poultices containing the oil of amber were applied to the feet. A surprising change for the better ensued, and the child happily recovered.

As closely connected with the subject of this paper, it will not be improper to notice another effect of spasm of the bowels, which is liable to be mistaken for disease of the brain. I cannot do this better than by communicating the following brief account of a case which fell under my attention. The child was affected with dysenteric symptoms, and in the progress of the disorder became delirious. By the usual treatment these symptoms were relieved, and I considered my patient convalescent. In a short time, however, a change for the worse took place. The bowel affection returned, accompanied with the most distressing derangement of the mental functions. The child was completely maniacal, showing a disposition to snap at and bite, like a dog, whatever approached it. My attention was very naturally directed to the head; and I concluded that some serious cerebral disease must have occurred, to give rise to such a train of symptoms. But the measures suggested by this view of the nature of the complaint were wholly ineffectual; and the little sufferer expired. Having obtained permission to examine the body, I opened the cavity of the cranium, and was surprised to find scarcely a vestige of morbid action in the brain. Within the abdomen, however, were discovered marks of violent spasmodic disease. The small intestines through almost their whole extent were irregularly contracted, in many places being diminished, for an inch or two in length, to the size of a worm, in others appearing as if tightly embraced by a ligature. I have no doubt that in this case the maniacal symptoms were the result of excruciating pain arising from violent spasm in the bowels.

On the whole it may be concluded, that the subject of intestinal spasm, involving, as it does, such dangerous consequences, is of the highest interest and importance; and that it more especially claims our minute attention, as, from the delusive nature of the symptoms sometimes presented, and our inadequate means of information relative to the feelings of the patient, we are liable, without much care, to be led into mistaken judgments, and to adopt inefficient if not injurious modes of treatment.

ARTICLE V.—*Cases of Fevers, illustrative of the benefit to be derived from the application of Leeches to the Epigastrium, and from Demulcents, agreeably to the method of Dr. Broussais;* in a letter to one of the editors of this Journal; by CASPAR MORRIS, M. D., one of the House Surgeons to the Pennsylvania Hospital.

I HOPE my reluctance to comply with your request, to furnish you with the observations that had been suggested by such cases of fever as had come under my notice, will not be attributed to any indisposition to oblige you, but solely to my wish not to commit myself by the expression of any opinion, built on so slight a foundation as the little experience I have hitherto had, will afford. As regards the doctrines of the school of BROUSSAIS, I have not yet been able to bestow upon them that time and attention which they demand; but so far as I have been made acquainted with the practice predicated upon them, it is one so consonant with reason, and which has received so much support from experience, as to merit farther trial.

I had for some time been impressed with the belief that the common practice, in the latter stage of fever, when the tongue becomes dry and black, with stupor, or low muttering delirium, was one calculated still further to oppress the energies of the system: and in this I am confirmed by observing that very few who thus sink recover, though dosed without intermission with the most powerful stimulants; and, though I do not believe, with some of the more ardent admirers of our sacred calling, that the science will one day arrive at that state of perfection that no outlets from life shall be found, other than accident and old age, neither can I reconcile it to my conscience to adopt the usual explanation of unhappy terminations of disease, that "it had become so deeply rooted as to defy the resources of medicine." Such views cannot be sufficiently reprobated: by them exertion is paralysed, and a grave is opened, in which, with his patient, the physician may bury all his errings, and conceal even from himself his own deficiencies.

Actuated by such feelings, but unprepared to deviate from the path marked out by those, to whom years and experience had given the power to guide such as, like myself, were just entering upon the practice of the profession, I was called to see the following case, which is thus noticed at the time in my case book.

Case 1st. John M'Leery, a labouring man aged 50, accustomed to drink, but rarely to intoxication, was admitted into the hospital, 8th month 12th, 1826. Has been sick 12 days without medical attendance.

Symptoms.—Anorexia—hot skin—tongue furred, yellow—bad taste in his mouth—tenderness at epigastrium, amounting to pain during frequent paroxysms of hacking cough with which he is much troubled—respiration short and quick—bowels costive—pulse soft, rather full and quick.

Treatment.—R. Magnesiæ vitriolat. ℥iss. Aquæ Oss m. Sig. ℥ij. quaq. hor. capiend. ad purgat. procur.—To drink freely of barley water, acidulated with lemon juice.—Applied blister over region of stomach.

13th. Salts have operated gently. Blister has not drawn. Less tenderness at epigastrium, and some diminution in heat of skin. Pulse unaltered.

14th. Saw him in the morning, when he was nearly as yesterday. Directed him to resume the salts, and to use the neutral mixture. I was absent during the afternoon; when he became comatose, with dry tongue and feeble pulse; for which he was directed to take carb. ammon. gr. v. every hour, together with the free use of wine whey. This treatment was continued throughout the night.

15th. Skin cold—tongue dark brown and dry—great disposition to sleep—bowels costive—pulse feeble. Directed the use of hot wine whey. Discontinued carb. ammoniæ. In the evening the stupor was increased; and, in my absence, the carb. ammon. was resumed, and sinapisms applied to his feet.

16th. Skin warm and moist—pulse soft and weak—tongue yellow and moist—stupor—involuntary evacuation of urine—tympanitis—bowels costive.

Applied dry cups to head. Enema of turpentine. Continued wine whey and carb. ammon. In the afternoon, as he still became weaker, with increased stupor, brandy toddy was substituted for wine whey, and turpentine julap was given in alternation with carb. ammoniæ. Applied a blister to the epigastrium.—Evening: Skin hot and dry—pulse weaker—unable to project his tongue.—Blister has drawn. Ordered the head shaved and a blister to be applied to it, and one to each leg.

Died early on the morning of the 17th.

Having, during the progress of this case, read a part of BROUSSAIS's Treatise on Chronic Inflammations, I resolved on a thorough examination of the body; in which I was assisted by Dr. SAMUEL JACKSON. The following notes were made at the time.

Examination seven hours after death.

External appearance.—Body fat. Skin yellow.

Abdomen.—On opening through the parietes, found the large intestines and stomach very much distended with gas. The small intestines have a mottled appearance, in some places livid, and in others of a reddish gray colour.

Stomach.—Externally has a slight blush, and contains so much flatus as to cause the great curvature to be projected forward. On opening it, it was found to contain about one pint and a half of a dark fluid, somewhat resembling syrup. On taking out the stomach and duodenum and washing them carefully, the mucous membrane was found covered with red spots, about the size of the finger's end, particularly abundant about the great curvature and pylorus, and extending into the duodenum.

Thorax.—Perfectly healthy in every particular.

Head.—Immediately on sawing through the cranium, there was a profuse discharge of venous blood. Dura mater healthy. Veins of pia mater much distended. Effusion between pia mater and arachnoid membrane. Ventricles contain a considerable quantity of bloody serum.

The unfortunate termination of this case, the evident marks exhibited, on dissection, of inflammation of the stomach and disease of the head, joined to the favourable impression received from reading the Phlegmasies Chroniques, induced a resolution to treat the next case I should see on the diluent system.

Case 2nd. James Wiegan, an Irish lad, aged 18, who had been labouring on the canal in Delaware, was admitted with fever of three days' continuance. There was much determination to the head—hot skin—furred tongue—contracted pupils—tenderness on pressure over the stomach—costive bowels.

Treatment.—Ice to be applied to head. Twenty leeches to the epigastrium. To be allowed the free use of iced barley water, acidulated with lime juice, and his bowels to be opened by cold enemata. By this treatment, the determination to the head was immediately removed; and, instead of constant restlessness, which had existed from the commencement of the disease, he became tranquil, the skin more cool, and the pulse less frequent. The treatment was continued without variation, the symptoms gradually improving till the third day after his admission, (the 6th of the disease,) when an intermission took place. Not being yet entirely weaned from my former views of fevers, I immediately resorted to the sulphate of quinine. In the afternoon, the febrile symptoms returned; and the lemonade was resumed. They went off in the morning, with a slight moisture; and the quinine was directed in doses of gr. ss. every hour. The intermission of this day was a short one, and the fever returned with renewed violence. Finding this to be the case, I directed the tonics to be laid aside entirely, and the cold drink and enemata to be resumed, and applied blisters to the legs. In the morning, there was again an intermission; notwithstanding which the diluents were continued. The fever did not come on so early as on the preceding day by two hours, and had less intensity. He had slight attacks on the two following days; after which the disease left him altogether. He continued in the house about one week, using farinaceous diet; and, at the end of that time, was discharged well. During the whole time he was under treatment, there was a manifest improvement in his feelings from day to day; with the exception of the two in which he took the quinine. His bowels were freely opened by enemata of cold water.

CASE 3d. Thomas Moran had been under treatment for fever for two weeks; had been freely purged, and had made use of the neutral mixture. Upon the first appearance of remission, he was put upon the use of sulphate of quinine. When I first saw him, he had a remission, amounting nearly to total absence of fever; but each afternoon he had a very violent exacerbation, lasting about 14 hours, and then going off with profuse sweating. This had continued about one week. Finding that he did not improve, and that his tongue still continued furred and yellow, I directed him to stop the use of the quinine, bled him from the arm, ℥vi, and ordered the free use of barley water. The violence and duration of the febrile paroxysms were immediately moderated, the sweating became less profuse, and his strength increased. His bowels were opened twice in the day, without the use of any purgative. In the course of three days from the time the use of tonics was suspended, his fever had left him entirely. At the end of a week, he drew my attention to his mouth, which was covered with aphthæ: for these I gave him a gargle of solution of borax, with a little honey, which very soon relieved it entirely.

CASE 4th. Reuben Johnson, aged about 30, was admitted with fever. Could not learn what had been the duration of his disease.

Tongue furred—skin hot and dry—bowels costive—pupils contracted—eye suffused—has had no remission. Directed an enema of cold water; bled him ℥viij; and ordered him to be put on the use of the barley water, and to have no other nourishment. In about 12 hours after his admission, his skin became moist, and his extreme restlessness subsided. On the following morning, his skin again became hot and dry, and he was delirious. I applied cups to his head; to be followed by a blister to cover the whole scalp. Finding his delirium and fever to increase, I applied 30 leeches to the epigastrium; and, in one hour, an intermission was procured. He had two exacerbations of fever after this time; in one of which he was cupped on the epigastrium, and in the other again leeched. They were both of them mild, and of short duration; passing off with gentle perspiration. He was now allowed the use of water-gruel, and rapidly recovered. It is worthy of notice, that though no purgative medicine was given in this case, yet his bowels were so freely opened as to render an opium suppository needful, to prevent his being too much exhausted.

Case 5th. —— Davis, a labouring man, aged 50. Anorexia—tongue thickly coated—skin hot and dry—pulse feeble—headach. Had 30 leeches applied to epigastrium. Ordered cold enemata and the use of lemonade. Under this treatment, in a few days, his tongue cleaned, his appetite became natural, his skin soft and moist, and his bowels regular.

Case 6th. James Newlands. Fever of several days continuance. Tongue black and dry—bowels costive—pulse feeble—Skin hot and dry. Applied cups to the head, and directed the use of lemonade and injections. Finding the febrile symptoms unabated by the treatment, I applied 30 leeches to the region of the stomach; and, as the result, I was delighted to find a remission in a very short time, particularly of the headach, on which the cups had no effect. The remission, amounting nearly to the total absence of fever, continued 12 hours; at the end of which time, a slight febrile tendency was manifest, which did not attain any height. Continued the diluents. On the morning of the second day after the application of leeches, he had an entire intermission, free from headach or any local pain whatever, and his tongue was nearly clean and moist. In the evening there was a slight exacerbation, which was checked by cups to the epigastrium, and an enema of solution of salt. Morning.—Perfectly cool and comfortable—tongue still cleaning. Evening.—A slight exacerbation—very little headach—tongue clean, except at the root, where it is still dark—bowels freely opened without any enema.

Morning of the 4th day after leeching.—Skin cool and soft—tongue moist and clean—bowels twice open during the night—pulse soft and natural. He now passed from under my notice, was placed on the use of tonics, and recovered.

Case 7th. James Haggerty had been ill 15 days without medical aid. Tongue furred and dry—pulse very feeble—bowels costive—skin hot and very dry—great tenderness on pressure over stomach—headach.

Applied 30 leeches, and ordered the free use of demulcents and injections. Shortly after the application of the leeches, his tongue became moist, his skin cool and moist, and the headach left him.

2nd day. Continued, as last noticed, entirely free from fever. Continued barley water, acidulated.

3d day. Tongue again dry—pulse feeble—stupor—skin hot and moist. Wine whey was directed, in small doses, and persevered in till late in the evening, without any advantage. I then, notwithstanding the weakness of his pulse, had 10 leeches applied to the pit of his stomach; and in a very short time, the stupor was so far removed as to allow of his objecting to the wine whey, declaring that it gave him pain every time he swallowed it. An obstinate hickup, with which he had been troubled during the day, was entirely removed; and blisters, which had been applied to his ankles several hours without effect, now began to produce irritation.

4th morning. Tongue moist—skin natural—pulse soft—no headach or stupor—much strangury from blisters. Continue demulcents. Evening.—No fever—tongue moist—skin perfectly natural—pulse weak but soft.

5th morning. Skin natural—slight disposition to dryness of tongue—pulse soft. In the course of the morning his skin became very hot and dry, the tongue dry, and the pulse weak, with much disposition to stupor. Applied cups to head, and took, by their means, about ℥iii of blood, without affording any relief. On making pressure over the stomach, his brow became contracted, and he moaned deeply. Applied 15 leeches to epigastrium; and by the time they were half filled, the stupor was nearly removed, the pulse and skin became soft, and the tongue moist. Expressed himself much relieved.

Evening. Still comfortable—some little heat of skin, but no stupor—tongue moist.

6th morning. Tongue moist—pulse soft and weak—skin natural—some stupor. Directed sinapisms to extremities, and wine whey.

At this stage of the case, I was obliged to leave the city. He was placed on the use of the most powerful stimuli; and in three days, died. No examination was made.

It had been my intention to continue the notice of these and other cases, viewing them impartially, and recording the symptoms and treatment with precision and candour; and I had hoped that, from a report of the number of cases which I anticipated would claim the charity of the institution, we should have been able to form some judgment as regards the treatment of fevers. So far as the foregoing cases go, I have every reason to be satisfied with the practice adopted in them; and so favourable are the impressions I have received in behalf of the mild mode of treatment of fevers, that I shall certainly, when it shall be in my power, prosecute the inquiry still farther.

In the case of Haggerty, I was myself so astonished with the improvement in his condition, while using the leeches and demulcents, that I thought proper to have witnesses of the case; and two of my medical friends, accordingly, saw him with me frequently.

ARTICLE VI.—*A case of partial paralysis, produced by extracting a tooth.* By EDWARD PICKETT, M. D. of Huntsville, Alabama.

THE physiology of the nervous system is at present attracting so much attention, in every portion of the globe where medicine is cultivated, that every fact, having any bearing upon this interesting subject, is worthy of record. The following case being somewhat peculiar in its character, the writer is induced to offer it to the medical public, hoping it will not prove entirely unacceptable to those who have more ability for physiological and pathological investigation, than himself.

Mr. L. Ingram, a young labouring man, about 24 years of age, on the 14th of last May, had the second molar tooth on the *left* side of the inferior maxilla, drawn by a neighbour, who drew, with it, the first and third grinders; so that instead of extracting one tooth, he separated three: the first and second were drawn entirely out, and the third was retained only by its attachment to the surrounding gum. On the 5th of June, I was called to see him; when I was informed that, after his teeth were drawn, he went home to his usual labour, at which he continued for a week, during which he complained of being unwell, and occasionally of impaired vision. At the expiration of the week, he walked a few miles to an uncle's, where he was immediately confined to bed. Soon after his confinement, he was bled to the amount of ℥xvi, and purged with calomel; but as he continued to grow worse, a physician was called in, who prescribed calomel in small doses, and laudanum, to allay a very severe pain in the stomach, of which he frequently complained. This, with a blister to the nape of the neck, constituted the treatment before I saw him. I found him very feeble and emaciated, free from pain—skin moist—pulse soft, small, and about 90 in a minute—gum red and swollen, but no mercurial fœtor in the breath—several dark ulcers in the roof of his mouth—tongue white and dry—and when he attempted to thrust it out, it was thrown into the *left* angle of the mouth, which was much drawn down by its depressor muscle: he could not possibly extend his tongue beyond his lips, nor pass it to the right side of his mouth. His speech was greatly impaired, and some sentences were almost entirely unintelligible. The cavity from which the first and second teeth had been taken, was filled with a large fleshy excrescence, which projected some distance above the surface of the teeth, so that he could not close his jaws, or masticate, without pain. The third tooth had been permitted to remain in its socket, though, apparently, from its extreme looseness, entirely freed from its long connexion, and held only by the gum. I immediately drew it; which he said relieved him much. The excrescence was completely cicatrized, and appeared to possess but little sensibility; as it might be explored with the finger, and moderately pressed, without any other sensation than that of "soreness." It had been lanced two or three days before my visit, and I was told that a small quantity of pus had escaped. On the right side of the lower jaw, and external to the teeth, was an enlargement of the gum, resembling a common phlegmon, though solid, and possessed of but little sensibility. On its surface were two small excoriations, from which a bloody serum issued upon pressure. He complained of "dulness" and "deadness" on the *right* side of the face, particularly about the angle of the mouth, and on the same side, the depressor and levator anguli oris seemed to be completely paralytic. Previously to my seeing him, he had suffered much from paroxysms of pain in the region of the stomach; which would pass very suddenly to the gastrocnemii muscles, or the brain. For a short time before I saw him, the latter had been exempt from those paroxysmal attacks, which passed alternately from the stomach to the legs. During one of these attacks, which took place about an hour after my arrival, I examined the abdomen, and found the recti abdominis so firmly contracted over the region of the stomach, and the space extending to the umbilicus, as to appear almost as solid as a board. These attacks came on at all times; but most frequently in the early part of the day and at night. They were tolerably manageable with laudanum and tincture of camphor; which would sometimes relieve them almost as soon as swallowed, or cause them to pass directly from his abdomen to his legs. He said his "appetite was good," and that his hearing was defective, though he appeared to hear distinctly. His bowels were torpid, and he was perfectly rational.

Treatment.—I gave him laudanum and tincture of camphor, to relieve his pain and spasm; and ol. ricini, salts, and enemata, all of which proved necessary to move his bowels. At one o'clock in the morning of the 6th, I was roused to see him again in a very distressing paroxysm. Gave him about ʒj tinct. opii and ʒj tinct. camph.; which mitigated his sufferings; but they still continued until his bowels were opened with injections. The purgatives brought away many hard feculent lumps, not much unlike the scybala discharged in dysentery. His discharges had previously been dark coloured, but this morning had almost a natural appearance, though still rather dark. Pulse about 90—mouth and tongue dry—the edges of the latter clean, but the centre and back part covered with a brown fur—a slight brown incrustation on some of his teeth—breath offensive—free from pain. His head was shaved, and a large blister applied to the scalp. Prescribed a stimulating gargle of carbonate of ammonia, and weak grog; laxatives and anodynes to be continued pro re nata; a light nourishing diet, with the use of wine or toddy occasionally. Instructions were given to re-apply the blister to the scalp, after its first drawing, should the patient survive. I find that, in my notes made before I left the patient, I omitted one circumstance, of which, however, I have a distinct recollection; that is, his left eye had become inflamed about the time the paralysis occurred, but was better when I saw him than it had been, though still inflamed.

I left him about 10 o'clock of the 6th; and he died on the night of the 7th; but, as he was sixteen miles from town, I had no opportunity of making any examination after death.

In this case, I was inclined to believe that, in extracting the teeth, some serious injury must have been done to that portion of the third branch of the fifth pair of nerves, which is distributed to the lower jaw and teeth. The inflammation of the eye, perhaps was the result of the impaired function in the first branch of the fifth pair, which goes to this organ: the paralysis of the right side of the tongue must have been owing to a loss of function in that portion of the fifth pair distributed to the tongue, or in the right branch of the ninth pair: the paralysis of the muscles on the right side of the face, to the loss of function in a portion of the portio dura of the seventh pair—all referrible to the original injury done to the third branch of the fifth pair.

We apprehend that, in this case, an *irritation* was propagated through the branches of the fifth pair in the left side, and that certain nerves of the opposite side were affected with *paralysis.* We do not see, in the narrative of the case, sufficient evidence to establish the point, which nerves were paralysed; but we should be most inclined to conclude, from the *generality* of the expression of "deadness" and "dulness" on the right side, that it was the branches of the fifth. Dr. Pickett has not informed us whether the motions of the nostrils connected with respiration were deranged; by which we could have judged, according to the observations of Mr. Charles Bell, whether the portio dura was paralysed.

ANALYTICAL REVIEWS.

ARTICLE VII.—*An Inquiry concerning that disturbed state of the Vital Functions usually denominated "Constitutional Irritation."* By BENJAMIN TRAVERS, F. R. S. Senior Surgeon to St. Thomas's Hospital, &c. &c. &c. 8vo. 556. Longman, Rees & Co. 1826.

THE subject of irritation is daily engrossing a greater portion of professional attention; while its intricacy and importance demand great talent, attention and industry. The difficulties are numerous; but may be referred chiefly to our ignorance of the physiology of the nervous system, to inattention to the mutual connexion between morbid phenomena during life, and to a great want of precision in *post mortem* examinations. These impediments are not a little magnified by the very indefinite and indiscriminate use of the word irritation, even by the same writer, and by the inexcusable neglect of authors, in not clearly defining their technical words and phrases. We must often congratulate ourselves, if we can discover an author's meaning, after we have finished his work.

In a former number of this Journal, Vol. I, p. 158, we noticed the manner in which Mr. A. COOPER confounded local irritation with inflammation, and general irritation with fever. We stated, that the former was an affection of the nervous system simply, while inflammation and fever involved also the vascular system; and we alluded to the practical importance of this distinction. Since the publication of those remarks, Mr. TRAVERS, who is already advantageously known to the profession, has issued the large octavo volume which we are now to analyse, with the express intention of demonstrating, that irritations form "a distinct order of morbid actions, apart from fever or constitutional inflammation, and which, if we treat them in deference to the rules laid down for the treatment of fever, will utterly disappoint and mock our efforts." p. 484.

In the pursuit of this object, Mr. T. has endeavoured to ascertain, with more precision, the causes, the phenomena, and the laws of that morbid state, indicated by the term "Constitutional Irritation;" and hence, to deduce its pathological character, and scientific rules for its treatment. How far Mr. TRAVERS has succeeded, we shall afford our readers an opportunity of judging. He has certainly taken a decided step in advance of any of the English surgeons on the subject of irritation, and has furnished the profession with a most interesting and valuable collection of cases, which should be studied by every one, whatever credit he may attach to the views of our author.

In our opinion, the work might have been rendered more valuable, in a scientific point of view, if the necessary connexion between the healthy and diseased operations of the system had been more clearly indicated; and especially, if the post mortem examinations had been much more numerous, minute and extensive. We have often to regret, that the dissector's knife was confined to a limb, when death had resulted from an impression made on the great sources of nervous power—the brain, spinal marrow, &c.; for, however we may agree with Mr. TRAVERS, that the affection is "functional," yet few can, from inattention or from habit, conceive of death having occurred without *structural* derangement.

We, however, as students, but especially as reviewers, have heavy complaints to present against Mr. TRAVERS as to the choice of his words, the structure of his sentences, and the want of a clear arrangement through the whole work. The "almost inaccessible intricacy" of the subject will excuse much of this apparent neglect, and the value of the information we have derived from the perusal of this volume, has amply compensated us for our labour; but the above facts will be an apology for any misrepresentation, while we endeavour, in a very condensed manner, to present an unbroken view of Mr. TRAVERS's opinions; and, also, for deserting, in toto, his arrangement. We shall notice first, his views of the healthy human system, with the reciprocal relation of the vital functions; next, his ideas of irritability, and of local and constitutional irritation, and the principles and practice thence resulting; and finally, present as many cases as our limits will allow, in illustration of his opinions and practice.

The observations of Bichat, and his "collaborateurs," have formed a new æra in physiology, and must be constantly regarded as the foundation of all pathological inquiries. That great genius first noticed the important division of the vital organs and functions, as they belong to *animal* or *organic* life; to each of which he believed, there was a distinct nervous apparatus; the cerebral and spinal system being given to the former, and the ganglionic, or sympathetic system of nerves, to the latter. These two lives, evidently distinct, are nevertheless so intimately associated, in a perfect animal, that the integrity of the one is essential to the integrity of the other: the brain cannot act without the stimulus of arterial blood, nor the heart continue its functions without cerebral influence; for, as Mr. Travers observes, no observation has yet invalidated "the fundamental truth, that the brain, in totality, holds in dependence, immediate or intermediate, *all* the phenomena of life." p. 416. There is an inseparable connexion and dependence of the nervous and vascular systems upon each other; so that it is "impossible for either to be affected, in any serious degree, exclusively." Nevertheless, as will be hereafter shown, the symptoms of nervous disturbance will often bear no proportion to those of the vascular disease; and, on the contrary, the nervous derangements will often be excessive, yet the circulating apparatus hardly be disturbed. In all these investigations, we must bear in mind "the universal diffusion of the nervous system and its universal sympathy." The effect of an impression on one part is similar to that on another, however different in appearance may be the affected tissues; and when propagated, as is often the case, to the *whole* system, every portion of the body, however minute, suffers in the same manner, its functions or sensations being disturbed. Hence, says Mr. Travers, p. 432, "Whether an injury is inflicted on the head or on the extremities; whether its effects are propagated from the brain to the limbs, or, vice versa, from these to the brain, does not materially affect the construction of such cases." There is, in these cases, a simultaneous and universal disturbance of the nervous system, which involves, sooner or later, the general and the capillary circulation. This disturbance of the whole medullary apparatus of the nerves, Mr. Travers terms "*functional*," as distinguished from "physical," or "*organic*;" which we notice the more particularly, as the French evidently employ the word "*organique*," to denote *functional*, as well as "*structural*," derangement. The English confine it to the last sense.

The views above presented appear to be those adopted by Mr. TRAVERS; perhaps, however, a little extended. But he is not prepared to carry these principles into their details, and to assert, with an increasing portion of modern physiologists, "that contractility (irritability) is a distinct and specific principle, independent of any mode of sensation."—p. 419. We must, however, believe, that an assent to this proposition would have assisted him in many of his difficulties, and that it will be found, not only true, but useful; that a distinct vital property, or principle, by whatever name it may be known, belongs to each of the two lives, animal, and organic. That the sensibility and the irritability of a part, (the animal and the organic sensibility of BICHAT,) however mutually dependent, and however involved with each other, are *different* properties, connected with a different organization, existing under different circumstances, and often giving origin to phenomena totally distinct.

Hence, irritation should not be confounded with sensation; nor the existence of pain in a part be invariably associated, as it is in the minds of very good pathologists, with the idea of inflammation, or, at least, of increased vascular excitement.

Our concern at present is with irritation; but as Mr. TRAVERS has not adopted the above distinction, we must be excused, while presenting his views, in confounding the two affections; which, indeed, under any circumstances, is often unavoidable.

"Every part of a living animal has its peculiar function, to the performance of which, it is incited by an appropriate stimulus. Its susceptibility of the impression of such stimulus, is denominated its *irritability*."

This property exists in every organ, and is not confined to any particular form of organization, as nerve, muscle, or blood-vessel. It is manifested by signs which vary with the function of the organ: in some, by sensation, in others, by motion; in some, by a combination of these, which is often not cognizable by our powers of perception, and of which we discern only the effects. "Irritability, then, is an inherent property of the living system, and is not only indispensable to the functions of those organs by which life is maintained, but is the earliest and latest indication of life." When there is no irritability of the vital organs, life is extinct.

Every organ of the body has its peculiar, or appropriate, portion of irritability, during health; so that its functions are executed, and the harmony of the system is preserved. This portion of irritability is, therefore, essential to the well-being of the system; but when, from causes internal or external, it becomes augmented, diminished, or perverted, the health is disturbed. Healthy, is thus converted into morbid, irritability. Every one understands what is meant by an irritable eye, by an irritable mind, stomach, &c. There is a preternatural susceptibility to impression, even from natural and appropriate stimuli. This is often true of the whole nervous system;* in which case, we, with propriety, speak of an irritable habit, or an irritable constitution.

This morbid irritability is *proper*, that is, the direct result of an impression on a part; or *sympathetic*, arising, secondarily, from an irritable condition of another organ; thus, worms in the intestinal canal may produce a temporary blindness. Let it be remembered, that this sympathy takes place between the mind and the body; the one often deranging the other. But each may be singly affected;—a man may lose his senses, from terror, while his corporeal functions remain perfect, and, on the contrary, a limb may be wrenched off, and the patient may die in twelve hours, preserving his mind to the last.

Sympathetic irritability is *direct*, as between organs served by branches of the same nerve; or *circuitous*, as between remote organs, through the medium of the brain; and it is often *universal*, the entire system sympathizing with local injuries, or diseases; that is, as far as we can understand Mr. Travers, the entire nervous system, in some cases; in others, the whole vascular and absorbent systems, being also involved.

Mr. Travers adopts the views and language of Mr. Hunter; who defines an irritable habit to consist in "an increased disposition to act, without the power to act with." And again, as "over-action to the strength of the parts." Mr. T. observes, "that extreme susceptibility, and consequent over-activity, are invariably coupled with, and most probably depending on, weak and insufficient powers of constraint and resistance." And again, "a weak organ, or constitution, is one easily disturbed, and put out of order; because it is continually excited to greater activity than it has power to support; greater, therefore, than is consistent with the harmony of the system."—p. 13, 14.

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* This proceeds on the presumption adopted by Mr. T.; and by physiologists generally, that irritability is dependent on the nerves.

Hence it appears, that weakness, in the opinion of our author, implies irritability; at least, the former is necessarily followed by the latter: and, moreover, that an irritable nervous or vascular system may be as well marked as an irritable stomach or skin. This last proposition is practically acknowledged by every one who admits, that some individuals are more easily acted on than others; and that an accident, trivial to some patients, will be exceedingly severe, and even fatal, to an irritable system. Mr. TRAVERS adduces several cases illustrative of these ideas; and notes various circumstances, which will render the constitution irritable; such as an irritable mind, exhaustion from pain and spasm, confined situations, intemperance, pregnancy and lactation, organic disease, simple confinement, &c. &c.

Such are Mr. TRAVERS' views of irritability, as a principle of health, and also as manifesting morbid phenomena. When any extraordinary impression is made on the irritability of a part, or of the system, the altered condition of the part, or of the system, is termed *irritation;* which is, therefore, local, or constitutional. Irritation is an affection of the nervous system, and, therefore, different from inflammation, which belongs to the vascular. So, also, general irritation is distinct from fever, although their relations are as intimate as those of the two systems, nervous and vascular.—Vide p. 39, 40, also p. 482, et seq.; to which we must refer our readers; although the history of irritation, whether we regard it as an excited or depressed state of the system or part, will fully vindicate the propriety of distinguishing it, pathologically and practically, from inflammation or fever; a distinction, however, which our author has not always kept in remembrance.

Local irritation is indicated,

First, By an alteration in the proper and habitual sensation or function of a part.

Secondly, By pain, unattended by any other sign of inflammation; of which, many examples may be given, especially from the neuralgic affections, and in diseases of the brain and stomach.

Thirdly, Inflammation may result from an irritation which is acute and permanent.

Local irritation, Mr. T. considers as terminating in resolution, in local inflammation, or in constitutional irritation: this last being "*indicated by a propagation or extension of the irritation to the great sources of nervous energy, and from them to all parts of the system.*"—p. 44. This sentence in italics, appears as one of the most definite expressions of Mr. Travers's idea of the constitution, and of constitutional irritation.

This constitutional irritation is the main object of inquiry; and is arbitrarily divided under two heads, *direct* and *reflected.*

Direct constitutional irritation is that state of the system which is wholly and immediately derived from the part, and in the production of which, the constitution has no share. Reflected irritation, on the contrary, originates in a peculiar morbid state of the constitution, is occasionally purely idiopathic, and, although the local irritation may give birth to it, yet is more frequently the cause, than the consequence, of the local action.

The present work is entirely occupied with the exemplification of the direct or sympathetic constitutional irritation. The examination of reflected irritation, Mr. T. reserves for another publication.

Mr. Travers adduces a very large number of valuable and interesting cases to illustrate the condition of the system to which he gives the name of irritation; and observes that

> "The symptoms of direct irritation indicate a depression or failure of the functions essential to life, either pure and progressive, or marked by alternations of excitement. The first, prostration without reaction, supervenes upon a degree of shock, so intense as to destroy the irritability of the vital organs. The second, prostration with excitement, is the result of a less abrupt or intense degree of shock, and indicates a greater degree of vital power, the excitement being a partial evidence of the unexhausted irritability of the vital organs."—p. 64.

Again, at p. 454, he says,

> "I have called this state 'prostration.' It is a state not actually amounting to, but threatening or nearly approaching a cessation of vital action."

And again, at p. 476, speaking of prostration with excitement, that is, where some reaction ensues after a severe functional shock has been received by the system, he observes:

"The name which I have given to this state sufficiently conveys my opinion *that it is based in debility*. The energies of the system are diminished in proportion as the actions are increased in cases of excessive reaction."

The cases adduced as the foundation of these opinions are those caused, 1st, by sudden, extreme, and unremitting pain, and certain affections of the mind co-operating with bodily disease; 2nd, by injuries and operations of various kinds; 3d, by inflammation; 4th, by exhaustion from hæmorrhage or colliquative suppuration; and 5th, by poisons, animal, vegetable, or mineral. All these, and perhaps many other causes, when sufficiently intense, will affect the whole nervous system, paralyzing it more or less completely; so that death will result, often without any symptom of excitement, forming "prostration without reaction:" but sometimes reaction is more or less marked, forming the "prostration with excitement."

"I should thus epitomize the symptoms indicating the two forms of prostration:

"1. Prostration without reaction is marked by universal pallor and contraction of the surface, shuddering, very small and rapid pulse, astoundment of the mental faculties, generally a dilated pupil, shortened respiration, dryness of the tongue and fauces; indistinctness, and at length cessation of the pulse at the wrist, stupor, oppressed and noisy respiration, coldness of the feet and hands, involuntary twitchings, relaxation of the sphincters, confirmed insensibility, stertor, and death."—p. 406.

"2. Prostration with excitement is marked by signs of languor, and stupor or drowsiness in the commencement; to which, after a variable interval, succeed rigor, præcordial anxiety, restlessness, jactitation, a rapid and bounding pulse, oppressed respiration with frequent attempts to sigh, flushed countenance, contracted pupil, dry heat of the skin, parching thirst, rejection of liquids taken into the stomach, incoherence and wildness of expression, sometimes amounting to fierce delirium. This state is succeeded by exhaustion; marked by somnolency, a profuse chilly and clammy sweat, a haggard and livid aspect, a small irregular or fluttering pulse, innumerably rapid, panting respiration, passive convulsions, hickup and subsultus, the stupor and stertor of apoplexy, and death."—p. 407.

We have made this quotation that we may fairly present our author's views of the nature of constitutional irritation. Like morbid irritability, it is associated with weakness; for it always implies a loss of power. It is a state of system very analogous to that which occurs in syncope; as Mr. TRAVERS endeavours to exemplify at p. 465, 6, 7; and also to that observed in *pure* concussio cerebri, where there is a mere functional derangement, but no structural alteration in the brain. This parallel is run, with much ability and truth, at p. 430, et seq.

In accordance, therefore, with the views of Mr. TRAVERS, irritation, local or general, might be defined a partial suspension of nervous power and influence; and is, therefore, to be always distinguished from inflammation or fever. "Fever requires, and as Mr. HUNTER justly observes, shows, powers of resistance." p. 493. "The general character of inflammation is power; that of irritation weakness:" p. 543; and the treatment of the two affections confirms these views. Irritation, simply considered, demands the diffusible stimuli, internally and externally exhibited, "to rally the flagging power, and restore the natural harmonies of the system," (p. 455) as imperatively as inflammation requires evacuating measures. The great difficulty exists in the management of those cases in which irritation and inflammation are combined, as cause or effect; for the nervous and vascular system, on which they are respectively dependent, are so intimately associated, that the two affections, in reality distinct, cannot remain long uncombined. These are the cases which test the skill of the practitioner, which embarrass our pathological reasoning, and often bid defiance to the best directed efforts of our art.

Under the pressure of these difficulties, the profession will no doubt be benefited by the appearance of the present work, imperfect as it necessarily must be; and it will hence be useful to notice, more particularly, the pathology and treatment of direct constitutional irritation, as presented by Mr. TRAVERS.

The first form of irritation is a "state of prostration without reaction;" being the direct result of a powerful impression made on the nervous system, under which the vital powers sink. Examples are frequently seen from gun-shot wounds, from burns, &c.

From these and similar causes, there are frequent instances of death, either immediate, or after the lapse of a few hours, or days, or even weeks, "which admit of no other explanation, according, in any degree, with the history and symptoms of the malady, than a suspension or failure of the nervous powers." The local irritation is propagated to the brain, as the source and centre of nervous power; and hence, every other organ has its functions impaired or destroyed. The first and most palpable evidence of impression, is on the heart: every thing denotes diminished circulation—such as a small and very feeble pulse, languor, paleness, coldness, &c. The blood no longer excites the heart to action, and the lungs also lose their irritability or susceptibility to impression. In these extreme cases, death results at once. p. 431. In other cases, life continues longer, but with every evidence of prostration in all the organs of the system, as well as in the vital. In the stomach, there is nausea and loathing of food, from a depression of nervous energy; and nausea is not only a consequence, but a never failing source of nervous depression. "The universal sympathy is in no organ more strongly exemplified than in the stomach; as is proved by the instant nausea preceding faintness from remote and transitory causes." Vomiting often affords relief to the system, by facilitating reaction. Vomiting, however, results from the depression of the nervous power; for, "*in muscular organs, morbid sympathy shows itself in extraordinary action;*" hence palpitations, hickup, vomiting, dysphagia, dysuria, cramp and spasm. p. 469, 470. In the instance of vomiting, the quantity and quality of the secretions contribute to its production. Hickup is a spasmodic affection of the diaphragm, and is a more advanced and decided symptom of prostration.

> "When of an aggravated character, I have not known it arrested, scarcely alleviated, by any remedy. Its continuance seems to depend, like that of vomiting, on the absolute exhaustion of nervous energy; *the presence of which, be it remembered, is as necessary to repose as to action—to control as to incite.*"

This is a very explicit declaration of a principle which has not been much attended to by late pathologists; and which, if true, (and we believe it to be so,) will limit, to a considerable extent, the use of evacuating remedies. Frequently, bleeding will excite convulsions, and stimuli will restrain them.

Enough has now been said to exemplify the state of prostration without reaction, and the condition of the vital organs which necessarily results. If the shock should be simply functional, and as the argument supposes, "unattended by hæmorrhage, or by the lesion of any vital organ," cordial drinks, and the diffusible stimuli, as ammonia, ether, camphor, &c. &c. with warm and gently stimulating enemata, are the obvious internal remedies; while the external sensations and the capillary circulation are to be roused, by artificial heat, and stimulating embrocations to the surface, especially to the epigastrium. If these are productive of advantage, some nutritious articles, as the farinacea, the yolk of an egg, jellies, &c. are to be substituted for the cordial drinks.

Two points are to be kept in mind: 1st. To maintain action, and 2ndly. Not to force action.

> "We are maintaining action upon inadequate power; in the hope, that the natural resources may come to our relief, and that we may gradually diminish stimulus, and increase nutriment, which is our only method of raising power to a balance with action." p. 458.

Hence, every thing depends on the judicious application of stimuli; which should always be made by the surgeon himself.

Purgatives ought not to be given, until the circulation is restored and pretty steady: then a spoonful of oil will suffice. These articles, while depression continues, will aggravate the mischief, by disturbing the stomach, whose sympathies are so important.

Of course, with his views of the nature of irritation, our author enters a decided protest against the indiscriminate use of bloodletting after recent injuries, with the view of relieving congestion:* but we are not prepared to second the following condemnation of opium, in cases of prostration.

> "Whether the congestion of the cerebral circulation in prostration proceeds from deficient action, or from determination, the tendency of opium is to increase congestion; opium, therefore, appears to me to be inadmissible." p. 462.

Mr. TRAVERS condemns its use in prostration from burns, in which it has been much employed; but he has lost sight of the stimulating powers of opium, which appear to us eminently adapted to this state of the system. Mr. BENJAMIN BELL observes, that the stupor of the patient is relieved, not aggravated, by opium; and Mr. S. COOPER regards it as the best preventive to convulsions, which are so often dangerous and fatal.

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* Vide our April number, for a valuable paper by R. COATES, M. D. on this subject.

When the circulation is roused by the stimuli, these must be lessened or omitted. "Since power is deficient, we must carefully husband our only resource, and not waste it in inordinate action." Reaction from over-stimulation is very dangerous. This forms the second division of irritation, "Prostration with excitement, or with excessive reaction."

"Reaction may be gradual, and restorative of a natural and tranquil state of the system, as exemplified in an ordinary fainting fit; or it may be irregular and violent—in fact, an action unsupported by sufficient power to maintain and carry it through; and in this case, the state of exhaustion into which the patient lapses, quickly terminates life. Symptoms of excitement are intermingled with those of an opposite description; an effect sometimes attributable to the over-stimulation of the system. The sudden accession, the imperfect development, not less than the abrupt termination, of the symptoms, broadly distinguish this ephemeral excitement from that of continued irritation; and evince that the former, like the lighting up which often precedes natural dissolution, is a genuine feature of that state of universal atony of the nervous system, subject to preternatural excitation, which I have termed 'Prostration with excitement.' This partial reaction is distinguished, by its short-livedness, and the non-attainment of a permanent condition, from that in which, reaction being complete, the more determined and durable character of the symptoms which supervene, implies that it is the result of a positive and continued irritation." p. 475.

From the name given by the author to this state of the system, prostration with partial or excessive reaction, his idea of its nature is evident. "It is based in debility. The energies of the system are diminished in proportion as the actions are increased, in cases of excessive reaction." p. 476. "Deficient and excessive reaction equally indicate weakness." p. 489.

This state often results not only from accidents, from colliquative suppuration, loss of blood,* &c., but also from local inflammation, when the powers of the system are impaired. Mr. Travers distinguishes several conditions of the system, resulting from local inflammation, which every one will observe in practice, however he may accord with the pathological views of our author.

"*Sympathetic fever* is a healthy reaction of the constitution without any impairment of its powers, such as they are, shown in the increased energy of the vascular system. If the natural powers of the constitution be deficient, the fever assumes the *low or typhoid character*, and, in its progress, gives out indications of the disturbance and distress of the nervous system, from its inability to support the increased action of the vascular; but the nervous affections are secondary, strictly symptomatic of the *fever*, whatever be its origin."

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* Vide review of Hall's Essay on "the Effects of Loss of Blood," in our April number, article *Medico-Chirurgical Transactions.*

But sometimes the nervous affection, that is, irritation, is primary, and destroys the fever if it exist, or precedes its occurrence.

"In certain forms of injury, certain constitutions, and modes of treatment, the inflammation is an irritant, and gives rise to a disordered action of the entire nervous system, which takes the *precedence*, or *place of fever*. Such a state of the system reacts upon the part, and either checks or destroys the restoring process; while a state of exhaustion, or what Mr. Hunter calls 'dissolution,' abruptly closes the scene on the fifth, tenth, or fifteenth day." p. 495.

The *Treatment* of "prostration with excitement" is one of great doubt and difficulty. "The confusion resulting from the rapid alternation of the symptoms usually denoting contrary states of the system, and the urgent conviction that death must speedily ensue, if this tempest be not assuaged, perplex the judgment of the practitioner." p. 477.

The commonly prescribed remedies of the schools, says Mr. Travers, are totally inadequate under these circumstances, where there is the greatest disparity between power and action. "The heart is rather thrilling than fairly pulsating; its semi-contractions are innumerably rapid; the expression is by turns excited and oppressed, wild and comatose; the breathing short, and wanting the relief of sighs. A continued exertion of reason cannot be maintained; and after a correct reply or remark, the patient wanders into irrationality." p. 477.

Hence, variety in the treatment is required; and Mr. T. observes that "experimental measures supported by any fair hypothesis should be encouraged." When the excitement is considerable, cold applications should be made to the shaved scalp, a large blister to the nape of the neck, and the bowels cleared with pills of calomel and jalap, or scammony, provided the stomach is not disturbed; otherwise, by stimulant and purgative injections. The continuance of this course requires much circumspection, as this state of excitement often shifts suddenly into that of sinking. p. 478. Of course the use of the lancet is inadmissible; and at p.

495, Mr. Travers cautions us, even in sympathetic inflammatory fever, against the too free use of evacuants, lest the powers of the nervous system might yield, and prostration be substituted for fever. "Nervous power is much more easily depressed than raised. Irritation is a very possible result of treatment as well as of malady; for by such means as too rapidly lower, we incur the danger of converting inflammation into irritation, and thus of destroying our only medium of recovery." p. 496. And of course, when prostration exists, however great the excitement, all "the appropriate remedies for high inflammatory fever are calculated to aggravate, in an alarming degree, the symptoms of irritation." p. 500.

But, says Mr. T., the main question is, Should opium be administered in this state? which he decides affirmatively; as he has witnessed even the highest degree of symptomatic delirium yield to the administration of opium. It requires, however, full doses, in the *high* excitement of irritation, to affect, and much more to control, the nervous system. In the low muttering delirium which accompanies sinking, small and frequent doses of opium, as one quarter of a grain every second hour, are decidedly beneficial. p. 479. The best substitute for opium is the henbane, in doses of three to five grains. In the over-active state of the vascular system, there is a charm in the operation of henbane altogether peculiar, although its anodyne and soporific powers are feeble.

We have thus endeavoured, in as succinct and perspicuous a manner as possible, to present Mr. Travers's view of irritation, with his practical deductions; and we have no doubt of their beneficial tendency. But it is to be regretted, that as the strongest minds are influenced by names, as well as by facts, he had not employed some other word than irritation for the state of the system here contemplated. Irritation, in the works of the best pathologists, is invariably associated with an excitement, with an erethism of the tissue or system concerned; and should not, therefore, be employed to express a directly opposite state of the constitution or part, where the irritability is prostrated, and true irritation, or nervous excitement, often cannot be induced. Irritation may be regarded as the proximate cause of inflammation, and also of inflammatory symptomatic fever;—Ubi irritatio ibi fluxus.

But Mr. T. cannot assent to this; for inflammation implies power, and irritation, according to him, weakness; and yet with, we may say, a necessary inconsistency, he speaks of irritation terminating in inflammation, provoking the act of inflammation, &c. We forbear further criticism; acknowledging the difficulty of the investigation, and grateful for the information imparted. Before, however, we separate from Mr. T., we must notice some of the numerous cases, adduced as illustrating the symptoms and the varieties of "direct constitutional irritation," and which many will regard, decidedly, as the most valuable portion of the work. Our space limits us to a few of the most important, from the several causes already detailed at p. 79.

Previous to these details, the following proposal of Mr. GEORGE YOUNG deserves to be recorded, as practically important, and as exemplifying a principle of Mr. TRAVERS, that continuous inflammation is most frequent in persons who incur injuries or undergo operations, in a state of health.

"A healthy carman, says Mr. YOUNG, came under my care, with a loose cartilage in the right knee joint. It had several times occasioned him to fall suddenly; and he was very anxious to submit to an operation. It appeared to me very desirable to accustom him, before the operation, to the reduced diet, rest and restraint, which would be necessary after it. He accordingly kept the house. On the second or third day of his confinement, I put on the roller and bound on the back splint, exactly as I intended to do after the operation, to keep the limb perfectly steady. This confinement of the limb occasioned a restless night, some fever, a whitish tongue, a quickened pulse, a little headach, spare and high coloured urine. He was very unwilling to continue the bandage and splint; to which he ascribed (and justly) all his constitutional disturbance, and the utility of which, prior to the operation, he could not at all comprehend. This circumstance, however, forcibly suggested to me the importance of accustoming him to restraint; it was therefore continued; the excitement which it had produced gradually subsided, and when I found that the bandage no longer occasioned any irritation, I performed the operation. Not one untoward symptom arose; the constitution was not in the least ruffled, and the wound healed by the first intention." p. 87.

In *Chapter 3d*, we are presented with examples of direct constitutional irritation, as illustrating its symptoms, its varieties, its treatment, &c.

SECTION 1st.—BODILY PAIN—MENTAL IMPRESSION.

"Pain, when amounting to a certain degree of intensity and duration, is of itself destructive. Difficult and protracted parturition is, every now and then, fatal from this cause; and even in cases in which neither extraordinary difficulty nor protraction were experienced, a fatal prostration has sometimes supervened, which has admitted of no other explanation." p. 65.

Death is accelerated, in certain forms of mortal injuries, by sudden, excruciating and unremitting pain; such as from ruptures of the stomach, and of the gall and urinary bladders.

"I was called to a gentleman writhing with pain in the abdomen, which he had endured for the space of two hours previous to my seeing him, and described as unlike any that he had ever experienced. He accosted me in these words: 'Doctor, if you cannot put an end to this pain, it will very soon put an end to me.' So true was his prediction, that in twelve hours, from a state of comparative health, he was no more. This disease was an ulcer in the pyloric portion of the stomach, which had perforated its coats, and allowed of the escape of its contents into the general cavity." p. 71.

"Pain, even of the most harassing kind, when periodical, or relieved by intervals of ease, as in tic douloureux, can be endured for a long time; but this gradually undermines and wears out the preserving principle; as was proved in the melancholy instance of a late eminent physician, whose remarkably athletic and robust frame became emaciated to a shadow by mere corporeal suffering." "Pain," he was wont to say, "is the greatest sedative in nature." p. 77.

Mental influence.—"A young lady happily married, impressed probably by some unexpectedly fatal occurrence in the circle of her friends, entertained, from the commencement of her pregnancy, a morbid fear of death in child-birth; which, although unwarranted by any indication of unhealthiness, became, from its continuance and increasing strength, a source of anxiety to one of her immediate and confidential relatives. She was attended by an experienced and skilful accoucheur, who was also her relation. He assured me that the labour was in all respects easy and safe, and that not a single unfavourable circumstance attended it. The child was still-born and imperfect. The mother died suddenly in six hours after delivery. Every region of the body was examined with care by an eminent anatomist, and presented the appearance of health." p. 21.

SECTION 2nd.—INJURIES AND OPERATIONS.

The symptoms of direct irritation are exemplified, in their most aggravated forms, in some cases of severe *Burns*. As the symptoms of prostration, from these accidents, are generally known, we will merely narrate the appearances on dissection.

"A girl, seven years old, was severely burned by her clothes taking fire. She died eight hours after the injury.—*Dissection.* Considerable congestion in the vessels of the pia-mater and the plexus choroides. The fluid in the ventricles natural, and in healthy quantity. The cortical part of the brain darker than usual, from the loaded state of its vessels. Sections of the medullary part presented innumerable red specks. No morbid appearance in the chest or abdomen."

In another child, three years old, who died in twelve hours after a severe burn, on examination,

> "The vessels of the brain and its coverings, were greatly distended, and the fluid of the ventricles was more abundant than usual. No morbid appearance in the chest or abdomen." p. 87.
>
> "In another case of death from a burn, in addition to the general congestion of the blood-vessels of the brain, the pia-matral covering of the *medulla spinalis*, exhibited, throughout its whole course, a remarkable turgescence of its vessels." p. 89.

On the examination of the body of another patient, who lived near three days after a severe burn, but whose system never re-acted, stupor being almost constant, and the pulse hardly perceptible at the wrist, it was seen that

> "The vessels of the brain were not particularly turgid, but there was fluid effused between the tunica arachnoides and pia-mater, over the hemispheres and at the base. The membrane covering the pineal gland contained half a drachm of water. The plexus choroides was dropsical, but the water in the ventricles was not in unusual quantity. There was some serous fluid under the mucous coat of the larynx, which was more vascular than usual. No other morbid appearance." p. 92. et seq.

In some remarks on these and similar cases, Mr. TRAVERS observes, that in burns, pain is a favourable sign; and on the contrary, "the early subsidence of complaint, apathy approaching to stupor, as if the scale of sensibility had shrunk below the point of pain, is invariably a fatal symptom. Continued shivering is an ill omen; so also the failure of the circulation, the congestion of the capillaries, &c. followed by drowsiness, laborious breathing and stertor; which are often followed by apoplectic coma, convulsions and death.

> "The proximate cause of death appears to me to be a species of concussion—functional, not organic, by which the brain is deprived of its influence over the organ of circulation; for the symptoms of cerebral disorder are first manifested; secondly, a diminution of the power of the heart; thirdly, the respiratory function becomes impeded, as a necessary consequence of the two first." p. 108.

Fractures, Contusions, Lacerations, &c.—A number of cases of complete prostration, and some of prostration with excitement, are detailed under these several heads; but as similar examples must be more or less familiar to every surgeon, we shall merely notice the important *post mortem* appearances.

In a boy who died from a musket shot in his thigh, at the expiration of nine hours from the reception of the injury, and in whom there was no reaction,

"The hip-joint was uninjured, the trochanter and upper part of the body of the femur was shattered to fragments, the surrounding muscles extensively lacerated, and the artery torn across. The effusion of blood was inconsiderable; the *torn ends of the vessel having contracted*, and receding to the distance of nearly two inches. The contents of the head, chest and abdomen were perfectly natural, and free from any morbid appearance." p. 110.

The following case deserves attention.

"A man fell from the roof of a coach, and suffered a compound fracture of the leg. He was replaced on the coach, and brought to London, a distance of forty miles. On his arrival at the hospital, he appeared as if intoxicated, but recovered from this state in the course of a few hours. On the third day, without any considerable previous inflammation, the leg began to assume a dangerous appearance. On the fourth day he became insensible; his breathing stertorous, and the pupils of his eyes dilated. The symptoms so much resembled apoplexy, that it was supposed some effusion of blood had actually taken place in the brain. The same night he died: and on examination no morbid appearance whatever was found in the brain or other viscera." p. 112.

A girl, aged eighteen years, fractured her leg by jumping off a low wall. Symptoms of fever, cerebral affection, &c. with a quick and feeble pulse followed; and she expired about thirty-one hours after the accident. "*Examination* about three o'clock on the following day. The cerebrum was very firm; the ventricles were unusually dry, but a small quantity of serum was observed in the basis of the skull. The cerebellum was softer than usual, and the vessels throughout the brain were loaded with blood; no trace whatever of injury was observed about the scalp, cranium, or brain; but it may be important to state, that the pituitary gland was unusually large and hard, and that the patient had complained, for a fortnight previous to the accident, of severe headach, and had talked of being bled for it." p. 113.

Operations for recent injuries.—Mr. TRAVERS decidedly prefers the modern practice of performing the necessary operations, after recent injuries, before inflammation has supervened, as lessening the subsequent constitutional irritation; but in some few cases, prostration ensues after such operations.

> We have no room for details, but will merely report the post mortem appearances of a boy aged 15 years, who suffered amputation of the fore-arm, in consequence of the hand and wrist being literally mashed to pieces in a wool-carding machine; whose symptoms were marked by great dyspnœa, anxiety and vomiting, with a quick feeble pulse, and cold surface. The anxiety and labour of breathing continued till his death, which happened at 5 P. M., about eight and forty hours after the accident; and till within half an hour of dissolution his senses remained perfect.
>
> *An Examination* was made with great care the following morning. All the organs were remarkably sound and healthy, nor was any morbid appearance discoverable in any part of the body, except a slight erythematous blush upon the villous coat of the stomach; an effect, I considered, of the incessant inverted action of that viscus. p. 124.

Operations for Chronic Disease.—Under this head, are detailed several cases of direct prostration, in children, after the operation of lithotomy. In three of them, death ensued in a few hours; no post mortem appearances are mentioned. In a fourth, a child, six years old, became restless within an hour after the operation; which was in all respects favourable. In five hours he was cold, faint, without a pulse at the wrist, and apparently dying. Gin and ether, diluted with barley water, were administered, with an immediate and salutary effect. The convalescence was uninterrupted.

It was found that the parents of these children had been in the habit of giving them gin, to allay the severity of the paroxysm of micturition.

In some of these cases, the patients died in convulsions. The unavoidable *effusion of blood* in operations, insufficient of itself to create alarm, " obviously predisposes to the convulsions; which sometimes prove fatal, especially to children." " We see these spasms in apparently opposite states of the system; in the plethoric and exsanguine, in the robust and the debilitated, in congestion and in effusion, in acute inflammation, and in destructive ulceration." " The tendency of a local irritant to produce convulsions is augmented by any sudden depression of power, as, for example, by shock or by hæmorrhage. When the system is thus exhausted, convulsions are often abrupt in their appearance, and overwhelming in their effects."

To this opinion of Mr. Travers we have already alluded, at p. 81, as one deserving more attention; for he observes, that "there is an active and a passive form of convulsions; and to the proper treatment of the disease, on which they are symptomatic attendants, the understanding of this distinction is of the last importance. In one case, we look for relief to cordials and tonics, in another, to venesection and purgatives." p. 144.

SECTION 3d.—INFLAMMATION FOLLOWING INJURIES AND OPERATIONS.

Mr. TRAVERS brings forward many interesting cases to exemplify the principle, that general irritation, in other words, prostration of the vital powers of the system, not unfrequently ensues from local inflammatory affections, especially when in confined situations. Instead of sympathetic fever, we have all the well known symptoms of exhaustion, or collapse. This sinking condition of the system is frequently seen in cases of gangrene and sphacelus. We shall merely record the following criticism, for fear it may be as justly deserved by some among us, as among our trans-atlantic brethren.

"I have known *eminent* practitioners prescribe calomel and jalap every six hours, within two days of the patient's decease; in the belief that so vitiated a condition of the visceral secretions as of course and consequence exists, is yet the gravamen of the mischief. At the same time wine and strong nourishment have been proscribed. This is the ultraism of faith in certain doctrines, unimpugnable when unabused, but capable, like every thing excellent, of being injured by a blind devotedness." p. 157.

SECTION 4th.—HÆMORRHAGE AND COLLIQUATIVE SUPPURATION.

The loss of blood, when not directly fatal, sometimes leaves a patient so prostrated that he cannot endure any subsequent operation.

A man was brought to the hospital in a state of collapse from hæmorrhage; his arm being much shattered by the bursting of a gun. "I waited," says Mr. TRAVERS, "a couple of hours, to ascertain his condition, before proceeding to amputation. At the expiration of the two hours his pulse was beating 60 in the minute, and neither thready nor intermitting as before; his faculties were perfect, his limbs warm, and his complexion much recovered. In the operation, scarcely an ounce of blood was suffered to escape. He supported himself with remarkable firmness until the limb was separated; when he suddenly swooned, as if from the effort. From this he soon recovered; but although closely watched, and well plied with cordials, swoonings returned at intervals, and he expired on the evening of the following day." p. 183.

A considerable hæmorrhage is often injurious in another way. It so prostrates the vital powers as to expose the injured parts to the imminent hazard of erysipelas and gangrene.

"A stout middle-aged gentleman was cut for a deep fistula; and some hours after, bled from the wound, to the extent, it was conjectured, of two pints or more. On the fifth day following the operation, the nates, scrotum, and top of the thigh on the same side, were attacked with acute erysipelas, which threw up phlyctænous vesications and ran rapidly into gangrene. To this he speedily fell a victim, in spite of every effort to support him with diet and medicine." p. 184.

Mr. T. does not adduce an example of prostration with excitement, after severe hæmorrhage; although he distinctly alludes to this state of the system, and subsequently quotes the opinions of Mr. HALL, as published in the Medico-Chirurgical Transactions.*

Excessive suppuration will, if continued, exhaust the vital powers, and be followed by prostration and death. Some cases are adduced, which show that this sinking often ensues suddenly, when the system appeared tranquil and the wound healthy; but we must hasten to that portion of the work which is the most novel and interesting, viz. examples of constitutional irritation from poisons.

SECTION 5th.—POISONS.

Mr. TRAVERS confines himself, almost exclusively, to animal poisons; and enters into a long elaborate discussion, as to the consequences of wounds received in dissection.

These consequences he refers to two distinct sources; one the result of simple irritation, the other the absorption of a poisonous matter. He treats rather cavalierly, "the hardy assertion, ex cathedrâ, that exposure of an absorbing surface to dead animal matter was uninjurious; and that the form of the wound and a certain predisposed irritable state of the constitution, induced by impure air, sedentary habits, deficient rest, anxiety of mind, &c. afforded the real explanation of the phenomena attending these injuries." He acknowledges the influence of a previous morbid state of the system; but contends that this is altogether inadequate to explain the terrible consequences too frequently resulting from very trifling dissecting wounds. In the one class of cases, from simple irritation, the constitutional affection is sympathetic of the local inflammation; in the second class, from poison, the symptoms of constitutional irritation are not depending on the local inflammation, although they may sometimes be aggravated by it: "and in general, I should be disposed to say, that the symptoms of local inflammation and constitutional irritation exist in an inverse ratio of severity." p. 203.

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* Vide review of Hall's Essay, in this Journal, vol. i. p. 384.

The *sympathetic* disturbance of the system may arise from local inflammation, in one or all of the following tissues of the limbs: in the absorbents and their glands, superficial or deep-seated; in the veins; in the cellular membrane, where it is phlegmonous, erythematous, erysipelatous, or gangrenous; and in the thecæ of tendons and fasciæ of muscles. Valuable observations are made on each of these varieties of inflammation, and on their respective influences on the constitution; these not unfrequently proving fatal, especially in persons previously debilitated or diseased.

In illustration of the opinion, that poisonous matter is often imbibed from dead animal substances, many cases and arguments are adduced: some of the former we shall condense, as being new and every way valuable, theoretically and practically. The latter we must leave to the readers of the work itself.

Mr. Astley Cooper met with the following case.

Mr. Elcock, a student, slightly punctured his finger in opening the body of a hospital patient, recently dead, about 12 o'clock at noon, on Monday. In the evening, finding the wound painful, a poultice was applied and some active aperient was taken. During the night, the pain increased to extremity; and symptoms of high constitutional irritation presented themselves on the ensuing morning. No trace of inflammation, however, was apparent, beyond a slight redness of the spot at which the wound had been inflicted, which was a mere puncture. In the evening there was still no local change to be discovered, but the nervous system was agitated in a most violent and alarming degree; the symptoms nearly resembling the universal excitation of hydrophobia; and in this state he expired at three o'clock on Wednesday morning, within forty hours from the injury.

On Saturday morning, Dec. 28, Dr. Pett examined the body of a lady, dead of peritoneal inflammation after her confinement. In the evening, he experienced much uneasiness on the last phalanx of the middle finger, and on examination he discovered, with the aid of a lens, a minute puncture, and a slight blush around it. This was touched with the nitrate of silver, and subsequently with a small quantity of nitric acid. Neither application gave pain.

At 9 A. M. on Sunday, the finger was much swollen and inflamed, with red lines proceeding partly up the fore-arm. His countenance was haggard and depressed—pulse 90. Dr. P. stated, that he had repeated the caustic; as the former applications had given no pain and the uneasiness of the finger remained. The pain thus produced amounted "to agony;" followed by violent shivering and afterwards by some degree of heat. Leeches, fomentations, and poultices, were applied to the hand, and calomel, with senna and salts, exhibited. At one P. M. appearance greatly altered—countenance suffused—his eyes hollow and ferrety. There was a peculiarity of breathing which never forsook him; it was a suddenness and irregularity in the act of breathing, amounting almost to sighing. His manner was marked by excessive torpor—pulse rather soft, and at 90 or 100—the last and middle phalanges of the finger were gangrenous—the hand swollen--and the inflamed absorbents could be traced to the elbow, with uneasiness in the axilla.

Monday morning.—Dr. P. passed a wretched night and complained of extreme exhaustion. Absorbents and glands in axilla inflamed--pulse irregular. The hand was lanced; a minute quantity of matter escaped.

Tuesday morning.—Symptoms worse, with much restless anxiety. No increase of inflammation or of gangrene in the hand; but the same virulent inflammation was manifested in the axilla and side of the chest; the skin of which was marked by an erysipelatous blush, and pitted on pressure.

On Wednesday—countenance frightfully wan and haggard--pulse 110, irregular and feeble—breathing quick and oppressed. The inflammation of the hand and arm had subsided, but had extended more over the side. The skin was of a deeper hue; some crepitus and obscure fluctuation discovered. A small quantity of bloody serum oozed from an opening made with a lancet. There was evidently a gangrene of the cellular texture. Dr. P. died on Wednesday, the fifth day from the examination of the body.

The next case is that of Professor Dease; and is extracted from the 3d vol. of the Dublin Hospital reports. We condense some of the prominent symptoms.

Saturday, Feb. 13, 1819.—Mr. D. lectured on a subject dead only 48 hours, of a pulmonary disease. On Sunday morning he awoke with a violent shivering and sickness of the stomach; this was followed by a vomiting of his food and of bile, with acute pain in the left shoulder. At 3 P. M.

was bled to ℥xx., with no relief. At 9 P. M. pain continued, with fever; and some fulness was observed on the left side of the neck; the pain was aggravated by the slightest pressure.

Monday, Feb. 15.—Pain in the shoulder still intense.

Tuesday morning.—Bowels open; the pain in the shoulder was less severe. The purgatives were continued.

At 9 P. M. had some slight pain in his side; which, on examination, was found swollen, the skin unaltered. This excited suspicions of the nature of the case; and on examination, Dr. Colles discovered, towards the ulnar side of the second joint of the thumb, the mark of a scratch, a quarter of an inch long. This formed the diameter of a vesicle, which was half filled with a fluid of a milky consistence and whiteness. He could now bear pressure above the clavicle, and his shoulder was less painful.

Wednesday.—Was purged, and took an anodyne.

Thursday.—Slept for four hours.

Friday.—Bad night; some delirium; face has a yellow tinge; features sharp; on the right arm, two inches below where he had been blooded, Dr. Colles noticed a small vesicle containing a fluid, like that of the original wound on the thumb. This vesicle did not increase in size nor alter in any way.

Saturday.—More delirious—pulse 126 and smaller—the entire side swelled and studded with small elevations, like vesicles, but hard to the touch—in some parts an erysipelatous blush evident. This increased towards evening, as also his delirium—perspiration cold and clammy.

Sunday.—Became stupid, and his left leg stiff, with clammy sweats—sighing. 12 o'clock—Erysipelas extended to the axilla, and of a darker colour—a swelling on the anterior part of the right arm, occupying about a hand's breadth of the belly of the flexor muscles. A poultice applied. 5 P. M.—A slight serous discharge flowed from a puncture into this swelling.

Evening.—Pulse not perceptible—limbs warm—breathing quick and labouring. Died at 10 o'clock, (8th day.)

On Monday morning two or three vesicles were found in his back, and the swelling had extended down his left thigh. The left arm was swelled, and rather hardened from the elbow to the shoulder; but there was no redness or vesication.

Mr. Newby, on Saturday, May 31st, was exposed to a heavy rain. On Sunday he opened the body of a child, dead of enteritis and of erysipelas of the abdomen.

On Wednesday he had head-ach, nausea, constipation, pain in his limbs, heat, &c., pulse frequent, but neither hard nor full, tongue white. He showed me a pustule on the back of his left thumb, exactly resembling the small-pox—with slight pain in the axilla, without tumour or any appearance of inflamed lymphatics on the arm. Discharges from the bowels offensive.

On Thursday and Friday seemed better—no uneasiness in the thumb, and pain in the axilla diminished.

Saturday.—Had a restless night—thumb nearly well; complained of a deep-seated pain in the left breast, which assumed a slight pink tinge, and the axilla and arm became more uneasy.

Sunday.—Irritability excessive, with some delirium. The inflammation of the breast had extended and was surrounded with a deeper red margin of about one-eighth of an inch in breadth. Pulse 108—more feeble—tongue dry and brown.

Monday.—Restless night—pain in the head greater, and that of the left breast much increased. The tumour now extends from the sternum to the scapula, and from the clavicle to the left hypochondrium. Heat of skin much greater—tongue dry and brown—pulse 110—had two fœtid stools—restless during the day.

Tuesday.—Febrile symptoms continue. The arm has swelled, and the tumour of the breast contains effused serum, and is of a brownish yellow colour.

Wednesday.—The symptoms were aggravated during the night; and he died about noon, (11th day.)

During Mr. Newby's illness, his assistant, Mr. Jackson, had an erysipelatous inflammation of the fauces, with suppuration of the tonsils. His pupil had an attack of a low fever for one week. His house-maid had a severe cynanche tonsillaris. The nurse had an attack of pyrexia, and went home for a day or two; but returning to the house, was attacked with erysipelas phlegmonodes, which proved fatal. Another female, who assisted in the room after Mr. N.'s death, had also the erysipelas phlegmonodes, but recovered.

Tuesday, 4th Aug. 1818.—Higginbotham, in removing the body of a female who had died of typhus, had his left hand besmeared with a moisture which had oozed from it. He had at the time a recent scratch on the second joint of the left thumb. On Wednesday the scratch inflamed slightly. In the evening had a chill, with pain in his limbs and head. On Thursday at 2 P. M., vomited. Face flushed—pulse 120, full and hard—tongue very white.

Friday.—Been purged with calomel and jalap. Febrile symptoms more moderate. Has soreness on the top of the left shoulder, and fulness in the axilla, with numbness in his fingers.

Saturday.—Constitutionally, much better. Pulse 90—the scratch on thumb suppurating—the absorbents and their glands natural—but shoulder still uneasy, with soreness in left breast, which was slightly puffed and of a pink colour.

Sunday.—More fever—pain in breast and head—bowels relaxed.

Monday.—Pulse 120—great anxiety—breast swollen.

Tuesday.—Delirium—pupils of the eye contracted. Was bled, and leeches applied to breast, which was more tumid and high coloured. Was purged by medicine.

Wednesday—Fever, with delirium and great debility.

Thursday—Comatose and insensible—pupils contracted almost to obliteration. Died in the afternoon, on the tenth day from the inoculation.

These and similar examples are adduced to exhibit the most severe effects from the absorption of poisonous matter. Other cases are subsequently presented, of minor degrees of constitutional irritation from poison, received not only in the dissection of human bodies, but also of the inferior animals. After which Mr. TRAVERS enters into a minute investigation of the disputed question, whether a poison is ever absorbed, or, whether the constitutional affection is always symptomatic of the local irritation.

In deciding, very positively, in favour of absorption, he endeavours to discriminate between the two classes of accidents, points out the various circumstances which modify the effects of local irritation, and shows that some of these last cases are often so severe, and are so rapidly followed by a collapse of the system, as to approximate them very closely to the cases of absorption. Into these details we cannot follow him; and we shall bring our analysis to a conclusion, by recording, from this work, some very extraordinary facts regarding the absorption of poisons, which will interest not only the mere practitioner, but also the physiologist and pathologist.

Specific contagious diseases are not communicable, according to Mr. TRAVERS, after death. "I never knew, nor heard of a case in which venereal or carcinomatous symptoms succeeded to" wounds received in dissection; and as to subjects dead of small pox, although spurious pustules form upon the wounded fingers, "I never knew an instance in which the constitutional disease was communicated;" and hence, Mr. TRAVERS believes that the poison received in dissection is peculiar, and *is generated after death*. p. 366.

"Veterinary surgeons, however, receive the poisons of glanders, both from the living and the dead animal, by inoculating chaps and punctures; for the matter secreted in the cellular abscesses of persons so affected is capable of producing glanders, when introduced into the system of the horse or ass by inoculation. This is sufficient to show, that the *specific* *property of the poison is retained in its passage through the human system;* but there is no evidence of its acting on the human body, otherwise than as the poison of dead animal bodies." * * *

"Mr. TURNER, a veterinary student, injured his finger in examining the head of a horse dead of glanders. An ulcer followed, with inflammation of the absorbents and of the cellular membrane of the hand, and symptomatic fever. After some days an abscess formed in the opposite arm, and another on the lower part of the back. Matter taken from the abscess of the arm was sent to Mr. COLEMAN, who inoculated an ass with it and produced fatal glanders.

"Mr. TURNER's health was seriously affected; he became hectic. Subsequently an abscess formed in his lungs, another in his kidney, and after several months, abscesses formed successively upon each knee joint. From the last, matter was taken for the purpose of inoculating an ass, which died in eleven days glandered. A short time after, Mr. TURNER died also." p. 350.

Mr. COLEMAN, in a letter to his friend Mr. TRAVERS, on the above case, cites the following opinions and facts:—

"I think it highly probable, that in all constitutional diseases, such as small-pox, measles, lues, cow-pox, whooping-cough, and perhaps from the absorption of putrid matter and other animal poisons, the whole of the blood is contaminated. In acute glanders, *the blood is undoubtedly affected.* I have produced the disease by first removing the healthy blood from an ass until the animal was nearly exhausted, and then transfusing, from a glandered horse, blood from the carotid artery, into the jugular vein of the ass. The glanders in the ass was rapid in its progress, and violent in degree; and from this animal, by inoculation, I afterwards produced both farcy and glanders." p. 355.

ARTICLE VIII.—*Practical Observations on the Convulsions of Infants.* By JOHN NORTH, Surgeon-Accoucheur. London, 1826.

CONVULSIONS occurring in infants and young children, constitute a subject in the highest degree deserving the close attention of every practitioner, especially of such as have but lately entered upon the duties of their profession. No one indeed, who has witnessed the dreadful contortions of the little patient writhing in convulsions, and the intense solicitude of the parents to obtain prompt relief for their child, from its state of apparent agony—no one, who is sufficiently impressed with the necessity, in many of these cases, of immediate and active treatment, and the imminent danger, and even fatal consequences, resulting from hesitation or the least error of practice, but must earnestly desire to be in possession of correct views in regard to the pathology, and to have at his command such remedies as are adapted to remove effectually this perplexing and highly destructive disease. From the ordinary practical works, little or no useful information is to be obtained on either of these points. Medical writers have heretofore, indeed, strangely neglected a train of symptoms, by which thousands of the human race are annually swept from existence, during their earliest years. A few imperfect and superficial remarks constitute all that we are in general presented with, in relation to the nature and causes of infantile convulsions; while the plan of treatment proposed for their prevention and cure, is too often marked by the grossest empiricism.

That spirit of investigation which has for many years past so eminently distinguished the medical school of France, and which has very successfully directed the attention of the profession, in that country, to the study of those complaints which had, previously, been either entirely neglected, or imperfectly understood, has given rise to two highly interesting treatises on the disease before us. We allude to the work of BAUMES "*Sur les convulsions dans l'enfance*," and the more recent publication of "BRACHET *sur les causes des convulsions chez les enfans, et sur les moyens d'y remédier.*" We believe, however, that Mr. NORTH is the first English writer who has made the convulsions of infants the subject of a separate treatise.

The work of Mr. N. is undoubtedly replete with much valuable information, and many important and extremely judicious practical precepts. But the author has by no means exhausted the subject; while the entire neglect, throughout, of any thing like methodical arrangement, the careless manner in which, very generally, the treatise is written, and the amount of matter which it contains not immediately connected with its principal subject, are circumstances that detract greatly from its value. In our analysis of its contents, neglecting the order, or rather confusion, pursued by the author, we shall briefly notice such of his observations as we conceive worthy of particular attention; interposing an occasional remark, the result of our own reading and experience.

That children are peculiarly subject to convulsive affections, is a fact which has been admitted by every observer, "sous toutes les latitudes, sous la zône brûlante des tropiques, comme sous la zône glacée du Spitzberg."* From a return made by Dr. CLARKE, at the end of the year 1792, it appeared, that, of 17,650 infants born in the Lying-in hospital of Dublin, one-sixth died during the first year after birth, and that nineteen out of twenty fell victims to convulsions; and Dr. LANGE has recorded that, at Copenhagen, during a period of 13 years, no less than 12,769 perished from epilepsy.

It has been said that the number who perish from convulsions is much exaggerated; that in a great majority of the cases in which they occur, convulsions can only be regarded as a symptom of some other disease, the fatal termination of which has contributed to increase the various returns of deaths ascribed to "*general convulsions.*" To a certain extent this may be true; but, every allowance being made for these probably erroneous records, it must be admitted that a vast number of children are suddenly destroyed by an unexpected attack of these affections, when no previous derangement of health was evinced, or at a time when any malady, under which the child might be labouring, began to assume a less severe aspect, and to justify a favourable prognosis. Even though convulsions in children be viewed in most instances as merely symptomatic of some other disease, yet they are of sufficient importance to admit of a separate consideration; inasmuch as they not unfrequently destroy life in a few moments, when it was not endangered by the malady during which they were excited. p. 4.

The great disposition of infants to nervous affections is not surprising, when we consider, that the habit of bearing external and many internal impressions is yet, in a great measure, to be acquired; and until the frail mind and body of the infant are accustomed, by habit, to have their powers acted upon with impunity, the most hazardous susceptibility must necessarily exist. The muscles during infancy are pale, soft, and fragile, their contractions are quick, frequent, and feeble, and the external surface of the body is endowed with a very high degree of sensibility, in consequence of the nerves being covered only with a very fine or thin cuticle; hence, from very slight impressions arise very powerful effects. The muscular fibre, as well as the skin, is highly sensitive. The nerves are large in proportion to the size of the body; they resemble medullary pulps. Both the cerebral and ganglionic nerves are much more strongly developed, in relation to the body, than at any other period of life; and the brain is peculiarly large. As we advance in years, the coats of the nerves, and the muscular fibre, become firmer, and our susceptibility to external impressions is considerably diminished: hence it is, that in proportion as we advance in life, convulsions are less likely to take place. They sometimes occur during youth; in the adult they are rare; and they scarcely ever happen in old age. . The sensations of a child are quick, but transient. When any reaction takes place in the system, it is powerful and sudden, and coincides with the general mobility: motion, indeed, is the language of an infant. pp. 9, 10, 11.

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* BRACHET sur les Convulsions. Paris, 1824.

All children are not, however, equally disposed to attacks of convulsions. According to Levret, Mauriceau, Baumes, and other writers, children born with large heads, or whose heads increase in size disproportionately to the rest of their bodies, will be more subject to convulsions. Mr. North has seen them occur very frequently in children with small heads; while in those cases which have fallen under our own notice, and which have not been few in number, nothing remarkable was observed in regard to the size or form of the head. Convulsions are very frequent attendants upon a ricketty affection of the system. It is s[illegible] unfrequently to happen, that when some of the children of the same parents are affected with rachitis, others, who are exempt from this disease, are at an early age destroyed by convulsions.* Children of parents who marry at too early or too advanced an age, are more susceptible of convulsions, than the offspring of those who marry in the prime of life.

An hereditary predisposition to these affections has been noticed by many respectable authorities. Lorry relates the history of a family, in which the father, mother, and children were affected with convulsions from the most trifling causes, notwithstanding they were brought up in different situations. and their educations were totally different.

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* Dictionnaire des Scien. Med. Tom xlvi. p. 602.

The offspring of women in the higher circles of life, who enfeeble their health by late hours, hot and crowded rooms, improper dress, and unhealthy, irregular diet, are undoubtedly more disposed to convulsive affections, than the children of those females who are regular in their mode of living, and who enjoy the calm tranquillity of a country life. Convulsions are, indeed, of far more frequent occurrence in large and crowded cities, than in the open country. A plethoric state of constitution also increases the natural aptitude of a child for convulsions.

In warm climates the sensibility of individuals of every age, both to mental and corporeal impressions, is much more highly developed than in colder regions; and hence the greater frequency of convulsive diseases in the former.

The parts most commonly the seat of convulsions, are the eyes, the features of the face, the superior and inferior extremities, and the respiratory muscles. Each part of the body may be separately and successively affected, or the whole frame may be convulsed at the same time. The convulsive movements are occasionally confined to one side of the body, or are more violent on one side than the other. A portion of a muscle only, is occasionally influenced by the convulsive action, while the remainder is in perfect repose. p. 22.

Dr. Clarke enumerates* among the most common symptoms of infantile convulsions, foaming at the mouth, and "a violent redness of the face and scalp in the beginning of the paroxysm, followed by a purple colour of the whole body at the end of it." According to Mr. North, however, neither the redness of the face and scalp, nor foaming at the mouth, are very common appearances in simple convulsions. But Dr. Brachet has certainly erred, when he defines the paroxysm to be "toujours sans écume à la bouche." Neither fever, nor disturbance of the intellectual functions, forms an essential part of the symptoms of simple convulsions.

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* Commentaries on the diseases of children. p. 81.

The duration of a convulsive paroxysm is uncertain. It may last for a few minutes only, or continue for one or two days. In the latter case, however, there is some remission in the violence of the convulsive movements; the infant appears tranquil for a short time, and is again subjected to the same distressing and involuntary struggles.

The violence of the muscular contractions during convulsions, sometimes causes considerable pain. BAUMES asserts, that cases of convulsions have occurred of such violence, that the teeth have been broken, the eye-balls thrown from their sockets, blood driven from the nose, or effused into the cellular tissue, producing general ecchymoses; and that even the limbs have been luxated or fractured. Of the latter accident, LIEUTAUD has, also, recorded cases. Such occurrences must, however, be extremely uncommon. Mr. N. never noticed any examples of such extraordinary violence; and we can repeat the same remark in regard to our own experience, although it has been our lot to witness cases of infantile convulsions of extreme severity. Slight ecchymoses and discharges of blood from the nostrils are, however, not uncommon occurrences.

Whether convulsions have been continued or intermittent, the cessation of the paroxysm takes place in the same manner. The irregular movements become gradually less violent and frequent; the eyes less salient and of a more natural expression; the face assumes its usual look; and the little patient seems unconscious of any disturbance. If he can speak, he merely evinces great lassitude, and complains perhaps of head-ach. A refreshing sleep frequently succeeds. Not always, however, after violent convulsive attacks, does the patient regain immediately the power of all the muscles that had been affected, nor return to a state of perfect health. A curious case is related by Mr. THOMPSON, in the Medical Repository, of loss of speech and hearing, in a child eighteen months old, consequent upon a sudden attack of convulsions. Her vivacity remained, and her bodily health was unimpaired. She continued in this state until her sixteenth year; when, after the noise of a public rejoicing, she was observed to recover her sense of hearing, and she soon began to articulate.

Mr. N. is of opinion, that there is a strict analogy between simple convulsions and epilepsy. The muscular system is in each affected in a similar manner; but the attack of epilepsy commences and terminates by a state of stupor and dulness, which for a time destroys the senses and intellectual faculties. Nothing of this is observed in convulsions. Epileptic paroxysms occur, most frequently, also, without evident cause: the cause of simple convulsions, on the contrary, may, in general, be ascertained. Convulsions, however, attacking highly irritable habits, may run into genuine epilepsy, idiotism or paralysis. Infants, also, that have been frequently attacked by convulsions, are very liable to be affected with chorea, about the age of puberty; more particularly if females. p. 3.

Of the *proximate cause*, or nature of convulsions, we are, and probably shall ever remain, in doubt. We cannot expect positively to determine it, until we become acquainted with the medium by which the muscles are connected to the common sensorium and the volition of the mind, and with the nature of the nervous power. In the absence of more precise information, many conclusions of much practical utility, may be derived from a patient investigation of the various phenomena connected with convulsive actions, and by a close attention to the remote causes by which they are induced.

During a state of health, the velocity and force of muscular contractions are in relation to the degree of excitement that is applied, and to the powers of the animal. These contractions are soon succeeded by relaxation; and they are not again repeated until excited by the will, or by the stimulus peculiar to the part. During convulsions, the voluntary muscles are excited independently of the will; or, if an effort of volition be made, the muscles do not obey its dictates, as in the state of health. Without then possessing a knowledge of the essential nature of convulsions, Mr. N. conceives it must be evident, that whenever convulsive motions take place, some morbid change must exist in the seat of volition, or in the nerves, or in both; or that the muscles may have undergone some morbid alteration, in consequence of which they exhibit the various phenomena of convulsions, without any alteration in the nervous system. p. 28.

The foregoing statement strikes us as being extremely vague, and but little calculated to lead to useful practical results. We can conceive of no "morbid alteration" in the muscles, capable of inducing convulsions, which does not implicate the nervous system. We feel persuaded also, that in numerous instances convulsive paroxysms arise from *simple* irritation, without any actual "morbid change" in either the nerves, brain, or spinal marrow.

The pathology of many cases of convulsive affections is, confessedly, involved in the deepest obscurity: nevertheless, we believe that a great majority of them may be referred to one or other of the following causes: 1st. to undue irritation, in certain constitutions, of some portion of the nervous system, from the application of morbid or excessive stimuli; 2nd. to irritation induced by natural and ordinary stimuli, the sensibility or irritability of a part, or of the whole system, being exalted above the healthy grade, in consequence of disease; 3d to partial compression of the brain or spinal marrow, or irregular circulation in their blood vessels; 4th. to injury of the brain, or spinal marrow, from accidental violence; and 5th, to organic læsion of one or other of these parts. We simply enumerate these causes, without stopping to adduce evidence in support of their correctness.

Both in adults and children, the effects produced by any given irritation will depend on the particular constitution and temperament of the individual. In one, local pain, unconnected with general disturbance, may ensue; in a second, an attack of fever may arise, and in a third, convulsions with or without pain or febrile movement.

Convulsions frequently occur from local injury of particular nerves, but it is remarkable that the muscles to which the injured nerve is distributed, may be the last affected with convulsive motions. Convulsions do not, however, succeed every disease of the nerves: thus, Dr. PRING has shown that inflammation of a nerve does not, of itself, produce those specific effects that are displayed in the phenomena of convulsive affections. North. p. 29.

That the brain, in most cases of convulsions, is directly or indirectly irritated, there can be no doubt. This irritation may, however, last but for a moment, and be so trifling as to produce no serious derangement of the cerebral functions, much less any alteration of structure. It may, it is true, be kept up by a continuance or repetition of the exciting cause, and produce irremediable mischief. The irritation which was at first confined solely to the nervous system, may extend itself to the blood vessels; and an undue determination of blood being induced to the capillaries of the brain, inflammation and its consequences may ensue. We cannot, however, admit irritation of the brain to be the proximate cause of all convulsive affections; for in some cases of local injury, they may arise independently of the mediation of that organ.

Dr. Brachet has endeavoured to prove that every case of convulsions, partial or general, must be dependent upon cerebral irritation. This doctrine is not peculiar to him; but his authority is cited as he is the latest writer on the subject, and has obviously had considerable personal experience, which he has matured by an attentive consideration of the labours of others. Mr. N. however, states, that he cannot conceive that the convulsions which arise in plethoric habits, where we are called upon to draw blood, and those which occur from the excessive loss of blood, (it being well known that animals which die from hæmorrhage suffer violent convulsions,) can alike arise from cerebral irritation. It is a curious fact, however, that has lately occupied considerable attention, and of which Morgagni was aware, that there may be great determination of the blood to the head, with much turgescence of its vessels, when the individual has suffered severe hæmorrhage. In such cases the vessels of the head throb violently, pain is complained of, and if the subject be a child, it will be extremely restless and irritable. p. 104. Mr. Cooke, in his abridgment of the work of Morgagni, well observes, that the liability to this form of cerebral plethora appears to be proportionate to the preceding hæmorrhage and consequent debility. Dr. Seeds* has made some interesting experiments upon this subject. When death was caused by opening the veins of an animal, he found a state of venous congestion to exist in the brain. These experiments were repeated in this city, and we believe we are correct in saying, with precisely similar results.

It has been asserted by the late Dr. Clarke,† that "in every case of convulsions, the brain is, at the time, organically affected, either directly or indirectly." But this gentleman must certainly have employed the term "organic affection," in a very different acceptation from that which is applied to it by physicians generally. If he meant to convey by it the idea of *organic læsion*, his statement is, in the highest degree, incorrect. That, in most cases of convulsions, there is some functional disturbance of the brain, is not only probable, but certain. It is also true, that *organic* disease of the brain may exist as their cause, or ensue as their consequence; but this is very far from coinciding with the doctrine, which would teach that, in all cases of these affections, the brain is thus circumstanced. The recorded examinations of the bodies of children who have died from convulsions, prove that such is not the case. Indeed, the very symptoms of the disease disprove the invariable or very common existence of organic læsion of the brain as its cause.

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*Medico-Chirurgical Journal. February 1816.

† Commentaries on diseases of children. p. 90.

It is an undoubted fact, that convulsions in children are of much more frequent occurrence, at the present day, than during any former period. In ancient Europe, Mr. N. remarks, convulsive affections were scarcely known. It may, perhaps, be partly inferred, that the vast increase of nervous diseases is to be imputed to the modern and vicious system of educating infants. It is at least certain that all diseases of this class have increased, in proportion as fashionable education has removed children from that bodily freedom and carelessness of mind which, to a certain extent, are essentially necessary to the preservation of their health.

As one of the fruitful sources of this increase of infantile convulsions in latter times, our author would appear to consider the "too early" attempt, in modern systems of education, "to cultivate the mental powers of children"—by premature "efforts to improve the powers of the intellect, the organ in which they reside is exhausted. The practitioner then cannot too forcibly reprobate the pernicious enforcement of precocious studies." "I am persuaded, from frequent observation, that from this cause alone, irremediable mischief is frequently produced, and the foundation laid for fatal diseases of the brain, with which convulsive affections are so intimately connected." p. 37. Notwithstanding this bold declaration of Mr. N. on this point, we can in no degree coincide in opinion with him. The intellectual education of a child, however early commenced, can of itself be productive of no prejudicial consequences; and when the health of children has appeared to suffer from attempts at their early education, this has arisen in every instance, we are persuaded, from the injudicious method in which such education has been conducted;—from confinement, for the greater part of the day, in close and crowded school rooms, the air of which is rendered impure by the number of those who constantly breathe it; and from the prolonged restraint imposed upon that natural inclination, in all young children, to almost incessant bodily motion and playfulness, a disposition so essential to the health and well being of their little systems.

Infants are liable to convulsions from the first moment after birth; and it cannot be doubted that they occasionally arise from the excessive and long continued pressure of the head during protracted and difficult labours. We think that we have noticed this to be particularly the case when such labours have been accelerated by the use of ergot. When convulsions are dependent upon the above cause, according to Mr. N., they generally cease a very short time after birth. This is not, however, our experience: we have found them to be frequently obstinate and occasionally fatal.

Children, not unfrequently, are born in a state of asphyxia: many who are recovered, by appropriate means, from this condition, enjoy a perfect state of health; but in others, the vital powers can be only imperfectly excited, the respiration is laborious, and the countenance purple and bloated. To this state of things a fatal paroxysm of general convulsions almost invariably succeeds.

Convulsions are frequently produced by the imprudent custom of exposing the new-born infant to a vivid or powerful light. This fact, trifling as it may appear, did not escape the acute observation of VAN SWEITEN. Suddenly rousing young children from their sleep and carrying them from a room comparatively dark, into a glare, according to Mr. N., likewise renders them more liable to convulsions. It is also well known that in new-born infants, convulsions are very apt to arise from the irritation of retained meconium.

From the earliest period subsequent to birth, infants may be attacked with spasmodic colic. As a consequence of this painful affection, BAUMES and NORTH have seen children remain paralyzed for a considerable time; and the latter has remarked, that if the attacks are long and severe, convulsions or even epilepsy is not unfrequently produced. A similar observation is made by CHAMBON, in his treatise "Des Maladies des Enfans," vol. i. p. 241.

The most common causes, however, of those derangements of health, which either immediately or eventually lead to convulsions in children, are errors in diet, with respect both to its quality and quantity. That convulsions should frequently arise in children, from various irritations affecting the stomach, is not surprising. The nerves of that organ have an evident and a very powerful influence over every part of the frame: the strict sympathy, in particular, which exists between the stomach and brain is too well known to require particular attention.

It cannot be doubted, that convulsive, as well as other diseases in childhood, may be induced by sucking unhealthy nurses. A predisposition to these affections Mr. N. conceives to be originally produced in infants, in consequence of their being suckled by a nurse addicted to the immoderate use of spirituous liquors. Violent emotions, great anxiety of mind, or excessive bodily fatigue in the nurse, are also set down as causes of infantile convulsions. M. GILIBERT relates the case of a child who died from this disease, after having sucked a nurse that had been exposed to hard labour, under a burning sun. By a majority of the writers on infantile convulsions, they are said to be very frequently induced by sucking from the breast of a nurse during, or immediately after, a violent fit of passion. BOERHAAVE refers some cases of epilepsy to this cause; and BAUMES relates an instance occurring in the child of one of his professional brethren, where death was suddenly induced by convulsions, brought on by sucking the breast of a female who had been violently exasperated. Convulsions, remarks Mr. N., may, of course, occur in a child suckled by a woman of impetuous and ungovernable temper, although it does not follow as a necessary consequence, that the intemperance of the nurse must have caused the attack. For ourselves, we have not found children suckled by mothers of violent and passionate dispositions, more liable to convulsions, than those who derive their nourishment from the breast of females of milder and more even tempers. In more than one instance Mr. N. has known convulsions induced in infants, when suckled by nurses labouring under great anxiety of mind, although with apparently healthy breasts of milk. It is a common opinion, also, that if a child be suckled by a woman who is menstruating, it will be necessarily attacked with convulsions. This Mr. N. considers a ridiculous and imaginary supposition, which requires no further notice than the mere mention of its absurdity. We know not that convulsions are a very frequent, much less, a necessary consequence of a child's being suckled under such circumstances; nevertheless, we cannot consider the milk of a female, while menstruating, as affording a proper, or sufficient nourishment: it is, consequently, not adapted to support the healthy condition of the infant system, and may in that manner become a predisposing, or exciting cause of disease.*

The mind of a child is as sensitive as its body; and although we have no clear idea of the manner in which convulsions are produced by the operation of moral causes, the fact is proved beyond the possibility of doubt, by the lamentable consequences which so frequently arise from the influence of the various passions. Thus the passion of fear, suddenly excited, is often followed by convulsions. Although convulsions are not so apt to arise from the effects of anger, as of horror, or fear, we should guard against that violent emotion in children as much as possible. Especially dangerous is a violent fit of passion in those with large heads, flushed faces, turgid jugulars, and other indications of determination of blood to the head. p. 87. Indeed, in such children, every cause capable of exciting violent and long continued fits of crying, should be carefully avoided. During such fits, particularly when arising from impetuous anger, there is always a very considerable increase of the afflux of blood to the brain; and they have been known to terminate in a paroxysm of convulsions.

Allowing young children, particularly those of a delicate habit and high susceptibility, even occasionally, to remain late out of bed in the evening, especially when surrounded by company and various excitements, is a means of increasing their nervous irritability, and consequently augments any already existing predisposition to cerebral derangement or convulsive affections. p. 37.

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* Chambon, "*Des Maladies des Enfans,*" vol. i. page 328, enumerates, as one of the causes of infantile convulsions, "Le lait d'une nourrice qui éprouve, par l'effet de la menstruation, des douleurs assez vives pour exciter un trouble remarquable dans ses nerfs; d'où l'altération du lait."

Baumes has dwelt at considerable length, on the probability of convulsions arising, in infants, from impure air. It can require no laboured proof to show, that it is necessary for the preservation of the general health, as well as for the prevention of convulsions and many other diseases, that children should breathe a pure atmosphere. Not less important is a strict attention to the cleanliness of their persons and clothing. Dr. Clarke of Dublin, in the Transactions of the Irish Academy for 1789, has pointed out, very forcibly, the powerful influence of filth of body and clothing, in exciting infantile convulsions.

The irritation of retained and vitiated fæces may give rise to convulsive affections in children. Worms, also, in the intestines, are said to be a frequent cause of both simple convulsions and epilepsy. This Mr. N. does not feel inclined to deny, as of occasional occurrence, but he believes it to be the case much less frequently than is usually imagined. For himself, he does not recollect a single instance where convulsions appeared to depend on the presence of worms, or to be relieved by their discharge. Brachet and others are of opinion, that worms in the intestines are productive of mischief, only when diseased themselves; he imagines, that their movements are then more irregular, and that they evacuate vicious humours capable of producing irritation in the bowels. Mr. N. agrees with Lieutaud, that even the existence of worms, in children at the breast, is to be considered as very uncommon. There are many cases on record, in which worms engendered in the meatus auditorius, have produced convulsions. Brachet relates one such instance; in this the convulsions ceased upon the extraction of the worm from the ear.

Wickham and other German physicians, deny that any disturbance of the infantile system ever results from difficult dentition. They refer those symptoms of disturbance which occur during the process of dentition, to other and distinct causes. That children do, however, occasionally suffer considerable distress during the period at which the teeth are about to pierce the gums, is certain; and that the pressure of the protruding tooth upon the nerves of the part is, frequently, the cause of the convulsive paroxysms with which children are at this period affected, must be equally evident, from their almost immediate cessation when the gum is freely divided. Whatever, indeed, may be the cause of pain in children, convulsions are liable to occur, if the pain be severe, or long continued. The degree of pain necessary, however, to produce convulsive movements, will depend on the constitutional irritability of the infant. p. 111.

The desiccation of cutaneous discharges of various kinds, and the sudden repulsion of certain eruptions, are considered, by nearly all the authorities, as frequent causes of convulsions in children. It is observed in the *Dict. des Sciences Medicales*, article *Convulsions*, that among the cutaneous diseases, the repercussion of which may be productive of the most serious consequences to infants, measles are certainly to be included: and the writer of the article has, in many instances, known fatal convulsions to be occasioned by the improper treatment of the disease. Mr. N. on the contrary, has never known convulsions occur, during measles, however injudicious the treatment may have been. During the stage of accession of many eruptive fevers, paroxysms of convulsions not unfrequently take place. In such cases, they are considered, by some writers, a favourable omen. Mr. N. believes this opinion well founded, provided the eruption appear at its usual period. Baumes, Mensuret, De Laroche, and some other writers, on the contrary, consider convulsions, when they usher in an eruptive disease, a highly dangerous symptom. Cullen remarks, that if the attacks be severe and frequent, the danger is considerable, and prompt assistance is demanded. The point thus disputed by authors, may, perhaps, be settled, by reflecting that when an irritation of the brain takes place in consequence of the sympathy of that organ with a distant part in a state of disease, the sympathetic irritation, particularly in very susceptible constitutions, may pass into an independent disease of the brain, which may be followed by very serious, or even fatal consequences: hence then, convulsions preceding eruptive diseases, can never be viewed as favourable circumstances. They may be harmless, it is true, if the excitement of the brain be transient and purely sympathetic. p. 65. It not unfrequently happens that when a child has been exposed to the contagion of small-pox, measles, scarlet fever, &c. the most violent disturbance of the system occurs at the period when the eruption should have taken place, and only a very slight appearance is to be observed on the skin, which quickly vanishes. In such cases convulsions are common, and frequently fatal. p. 63.

Convulsions may be occasioned by inflammation of the membranes of the brain, by tumours upon the pia mater, sharp spiculæ of bony matter formed in the dura mater, abscesses in the brain, or blood effused in its substance from external violence.* Many curious cases are on record, in which considerable accidental injury of the head has been followed by partial convulsions, as of one arm only, &c.† HOFFMANN relates the case of a child, who, having the cranium fractured on the left side, and a considerable portion of the brain destroyed, was paralysed on the right side and convulsed on the left.

From whatever cause fever may arise in children, convulsive movements of different parts of the body will frequently attend the attack. In both acute and chronic hydrocephalus, convulsions also constitute a very important symptom.

By most writers, convulsions are said to occur, generally, in cases of spina bifida. In three instances of the disease, which occurred to Mr. N., no convulsions took place excepting during attempts to afford relief by means of pressure upon the tumour.

By the improper use of opium and its preparations, children are very frequently reduced to a state of general debility and irritability which very strongly favours the occurrence of convulsions. In the course of our practice we have had frequent occasion to verify the truth of this observation.

Excessive and long continued diarrhœa frequently increases, according to Mr. N., the disposition of children to convulsive diseases. When it has proceeded to such an extent as to break down the constitutional powers, the irritability of the child is increased to such a degree, that the ordinary light of day, or the most trifling noise, cannot be borne; while the bowels acquire such a degree of morbid sensibility, that whatever is introduced into them occasions violent pain, and frequently convulsions. p. 106. When convulsions occur in the course of obstinate and violent diarrhœas, they no doubt, in many cases, are to be referred to the same continued cause of irritation, by which the diarrhœa itself is kept up. Convulsions may likewise occur in children, in consequence of excessive hæmorrhages, of deficient nourishment, exposure to cold, &c.

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* BAILLIE's Morgagni.

† Journal de Med. t. lxviii. p. 10.

Convulsive affections are stated by WILLIS* and other authorities, to be occasionally epidemic. It would, perhaps, be more correct to presume that some epidemic disease had prevailed, of which convulsions were among the symptoms. In the Journal Generale de Médecine, vol. ii. an interesting description is given by G. DE CLAUBRY, of a very destructive convulsive disease, which occurred at Paris and its vicinity. This epidemic, which generally destroyed life within seven hours, only attacked children below eight years of age; it was also observed in dogs under the age of four months. By dissection, in the only case in which it was performed, blood was found effused under the cranium, all the vessels of both cerebrum and cerebellum were turgid with blood, and the dura and pia mater were of a deep red colour. In the thorax, the vessels of the lungs were found gorged with blood; the left cavities of the heart were much dilated, and filled with black blood; those of the right side were empty; the contents of the abdomen perfectly healthy, but rather paler than usual. No symptom indicated that dentition had commenced. The dogs that were opened after death from the disease, presented precisely similar appearances.

Dr. MOULSON has published some interesting observations on spasmodic and convulsive diseases, in the Medico-Chirurgical Journal for May, 1817; and he has given us the appearances on dissection, of some fatal cases. In every instance in which convulsions terminated fatally, under the notice of this gentleman, he invariably found vascular turgescence at the origin of the nerves distributed to those muscles that had been affected with convulsive motions. Similar evidence of the state of the vascular system in convulsive diseases, is afforded us by GALEN, MORGAGNI, &c. PORTAL enumerates many alterations which he met with in the brain and spinal marrow after such cases, as collections of air and water, or of a gelatinous matter, engorgements of the blood vessels, extravasations of blood, inflammation, indurations, abscesses, tumours, &c.

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* Opera, vol. i. pp. 496—7.

Baumes asserts that convulsions are much more frequent at the age of seven years; a period which he considers to be marked by a general revolution in the constitution of the child. **Rosenstein** and **Tissot** mark the period of eight years, as that most favourable to the occurrence of convulsions. Mr. N. is of opinion, that they much more commonly occur before the fifth year; which corresponds with our own experience.

According to our author, convulsions rarely appear during the night. It would seem to us, however, that we have as frequently witnessed this occurrence during the night as during the day.

The following symptoms are usually characteristic of that state of increased irritability, from which the occurrence of convulsions is to be anticipated. It will be observed, that during the day, the child starts at the most trifling noise; its sleep is disturbed by sudden cries; not unfrequently it sleeps throughout the day, and remains restless and entirely sleepless during the night: it now becomes feverish and irritable, quarrels with its companions, and derives but a momentary or no amusement, from its most favourite playthings. The eyes are frequently fixed, without being, apparently, directed to any particular object; or they are thrown upwards, and steadily fixed upon the ceiling. The pupil of the eye is sometimes for a moment contracted, and then suddenly dilated. When a candle is held close to the eyes, during the contraction of the pupils, Mr. N. has found the latter suddenly to dilate, and again, as suddenly, contract, the light being steadily continued close to the eye. The effect of light on both pupils is not always similar: one may remain fully dilated, while the other contracts; or one may remain stationary, the other being alternately contracted and dilated. Mr. N. states, that he has reason to believe, from repeated observation, that whenever a light is applied close to the eyes, and the same effect is not produced on both pupils, there is much cause to fear some serious affection of the head. An oscillatory motion of the pupil is, very frequently, one of the symptoms indicative of approaching convulsions. Upon viewing the position of a child during sleep, when, from the occurrence of the foregoing symptoms, we consider it predisposed to an attack of convulsions, we shall frequently find the limbs rigidly extended, the great toes and thumbs being turned inwards. The colour of the face varies frequently: at one moment it is pale, at another highly flushed. For a short time the countenance expresses great animation; the eyes are vivid and glassy in appearance; when, suddenly, and without cause, the little patient appears languid and inclined to sleep. The breathing is irregular; long and deep inspirations, drawn with apparent difficulty, are alternated with a short and *catchy* breathing. This is usually accompanied by a fulness of the upper lip, and contracted appearance of the alæ nasi, by which the natural expression of the countenance is altered. The hands are frequently directed towards the nose, apparently involuntarily; the fingers are either in frequent and sudden motion, or are firmly pressed toward the palm of the hand; more frequently the thumb is contracted upon the palm, and the fingers extended and separated from each other. This state of firm contraction of the thumb, Mr. N. considers an almost certain indication that convulsions will occur "at some subsequent period," unless warded off by appropriate treatment. When the child is put to the breast, it sucks eagerly for a moment, then ceases suddenly, throwing back the head with an expression of anxiety in its countenance, or perhaps rolling it from side to side. p. 74. Deglutition appears to be performed with difficulty when these symptoms occur. Hickup is not unfrequently one of the premonitory signs of more general convulsions. BAUMES regards it as a distinct disease, of sufficient importance to demand a separate consideration. Mr. N. has never seen this symptom alarmingly severe, of itself, in children, although sometimes troublesome from its frequency and long continuance. We have frequently met with hickup in children, and have never known it to produce any thing more than temporary inconvenience. It appears to us to be in general produced by a slight irritation of the stomach, resulting from too much or improper food. During dentition, children are frequently affected with slight convulsive movements of the muscles of the face, which give to the countenance an appearance of smiling. This symptom is frequently the precursor of well marked general convulsion. p. 131.

It is true, that each of the above symptoms may arise from a variety of causes, and be an indication of some transient derangement of health, without being necessarily followed by any decided paroxysm of convulsions. We have reason, however, to anticipate the latter, from the concurrence of several of those appearances, and are then called upon to adopt the precautions necessary to prevent their accession.

The term "*inward fits*" is of extremely frequent use among nurses and parents, and it has even been adopted by some members of the profession. Dr. ARMSTRONG, in particular, has written very elaborately upon their nature and treatment; but he has certainly attached to those slight symptoms which are considered indicative of these inward fits, much more importance than their nature demands. It would appear to us, that very generally they arise, as stated by Mr. N., from collections of flatus in the intestinal canal, produced, probably, by some trifling derangement of the stomach, or by the use of improper food. LALLEMAND, PARISET, and MARTINET, are of opinion, that the symptoms referred by the vulgar to "inward fits," arise from an inflammatory affection of the arachnoid membrane; while BRACHET is inclined to adopt the term "*convulsions internes*," to designate the premonitory symptoms of the convulsive paroxysm.

It is frequently difficult to determine either the duration of a convulsive paroxysm, or the ultimate consequences of its frequent repetition. The most violent and frightful paroxysms sometimes pass off, without any serious injury to either the present or future health of the child. In other instances, the attack, apparently slight in its commencement, either destroys the child in a few minutes, or seems to pave the way for its subsequent death, by destroying the powers of mind and body. When, however, the convulsive attacks are slight, short in duration, and succeeded by the natural cheerfulness of the child, danger is seldom to be apprehended; on the contrary, when they are long continued, return frequently at short intervals, or gradually increase in violence, there is great probability of a fatal termination. If they leave the child dull and heavy in the intervals, we have cause to apprehend a speedy repetition of the attack.

When a child is suddenly destroyed during a paroxysm, Mr. N. has reason to believe, from the result of his observations, that death is occasioned by a condition nearly allied to apoplexy in adults: this is also the opinion of BAUMES. Death may likewise occur, in consequence of respiration being impeded by the irregular contractions of the respiratory muscles; the lungs then become engorged with blood, and the circulation through them is interrupted and finally suspended. In some cases a state of syncope supervenes upon convulsions,[*] from which the child may never recover. Mr. N. fears, that in some cases, when a state of syncope has followed the convulsive paroxysm, that most horrible of all accidents, premature interment, has occurred. He refers to the instance related by Dr. JOHNSON, where a child in this state was recovered by frictions diligently applied to its surface near the fire, after having been laid out for interment.

Convulsions sometimes terminate by critical evacuations. Hæmorrhage from the nose not unfrequently puts a stop to the paroxysm. PLANQUE[†] relates an instance in which the paroxysms were constantly terminated by a copious hæmorrhage from the mouth, nose and ears. Their termination by diarrhœa has been most frequently remarked. Vomiting also, in the same manner, frequently produces the cessation of convulsions, by removing from the stomach the offending matter by which they were occasioned.

Although it is certain that children often recover from violent and long continued attacks of convulsive disease, with but little or no medical assistance, yet a spontaneous recovery can rarely, if ever, be anticipated; consequently, the best exertions of the practitioner are in every instance demanded, and the earlier resorted to, the more certain will be the success attending them. When convulsions are neglected until their frequent repetition has strengthened the natural or acquired predisposition to their recurrence, the best directed efforts of the practitioner will be unavailing.

The physician, called in *during* the paroxysm, can, in the opinion of Mr. N., do little, if any thing, towards arresting it; and but slender confidence is to be placed in any remedy that can be given to cut it short or relieve its violence. Consequently, his duty is confined principally to carefully observing, and alleviating those symptoms which have been described as indicative of an approaching attack. Although we would by no means wish to deny the importance of an attention to the premonitory symptoms of the present or any other disease, and of guarding against its accession by a timely resort to appropriate means, yet we cannot agree with our author in his opinion as to the inefficacy of remedies during the convulsive paroxysm. It has been our lot to be called to many cases of convulsions in children, in which we feel fully persuaded, we have been enabled to do much by our treatment, towards reducing the violence, and retarding the march, of the paroxysm; nay, in some cases, have very promptly cut it short.

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[*] BRACHET sur les convulsions.

[†] Bibliotheqûe médicale. t. iii. pp. 504–5.

In our treatment of convulsions we should first endeavour, by a deliberate enquiry into every circumstance which may have been likely to derange the health of the child, to detect the source of the convulsive attacks; as it is by this, in a great degree, that our remedial measures are to be directed. To effect this important object, however, is always difficult and sometimes impossible.

If, from the result of our enquiries, we have cause to believe that the paroxysm has arisen from a retention of the meconium, appropriate doses of castor-oil, and the warm bath, will in genegeneral put a stop to it. According to TISSOT, the discharge of the meconium may, in these cases, be prevented by a spasmodic constriction of the sphincter ani. SHARP has recorded some similar cases. In such instances laxatives are not indicated. The warm bath and emollient applications should be had recourse to. Mr. N. queries, whether a small portion of *extractum belladonnæ* might not be smeared around the anus with advantage.

In cases of convulsions dependent upon, or connected with, a constipated or loaded condition of the bowels, purgatives are of course demanded. The occasional employment of the warm bath, and a well regulated diet, will materially assist our efforts to procure regular evacuations. During the paroxysm, if purgatives cannot be administered by the mouth, injections per anum may be substituted, together with immersion in the warm bath.

Convulsions, and even epilepsy, have been mentioned as not unfrequently occurring from attacks of spasmodic colic soon after birth. In these cases purgatives will be required. The child should also be put into a warm bath, and have the abdomen freely rubbed with anodyne embrocations. If, after we have acted sufficiently upon the bowels, the paroxysms of pain still continue severe, and convulsions are threatened, a dose of laudanum, proportioned in quantity to the age of the child, must be given: warm fomentations should also be assiduously applied. After a free evacuation of the bowels, we should in general prefer anodyne injections to laudanum by the mouth.

When convulsions arise from unhealthy milk, or improper diet, there will generally be decided evidence of great derangement of the stomach. In such cases purgatives will be first necessary, followed by light tonics. Frictions upon the abdomen with the warm hand, will frequently assist our other efforts to relieve the distressing flatulency and pain by which the child is tormented. By many, emetics are freely given in those gastric derangements of children which appear to threaten convulsions, not merely with the view of freeing the stomach from any offending matter, but also, to rouse the organ to more healthy action. Mr. N. is of opinion, that more advantage will be derived, in such cases, from the judicious use of purgatives. During, or immediately preceding, a paroxysm of convulsions, where we have reason to believe irritation of the stomach to be present from any matters contained in its cavity, we would consider an emetic a remedy in the highest degree proper, whenever it can be administered. Emetics are, however, certainly counterindicated, when symptoms of undue determination to the brain exist.

Mr. N. has observed simple derangements of the digestive organs of infants occasionally to produce paraplegia, preceded by convulsions, and followed by a state of coma. In three cases which fell under his notice, the bowels were costive and the stools very dark in colour. Calomel and jalap were given as purgatives; repeated frictions were made to the stomach and bowels; the children were immersed in a warm bath; and a mixture of rhubarb and gentian were subsequently prescribed. Complete recovery took place in all. When, from a deranged condition of the digestive organs, an acid is developed in the primæ viæ, calcined magnesia, a weak solution of soda, or a few drops of a solution of pure ammonia, will be proper.

In every case of convulsions the state of the gums should be carefully examined, and if they be found swollen, or firmly distended by an approaching tooth, the distressing irritation which is the almost invariable consequence, should be at once removed by a free incision of the gums. An attention to this circumstance will frequently prevent a threatened, and almost instantly relieve a present, paroxysm. In some cases of difficult dentition, where convulsions were apprehended, Mr. N. has seen much benefit from the application of sinapisms to the feet. In cases where the irritation has been extended to the general circulation, blood-letting will be demanded; particularly in robust and plethoric habits. LIND and BAUMES recommend ptyalism induced by mercurial fumigations, in cases of difficult and painful dentition. We confess we should not be inclined to imitate the practice.

When convulsions are traceable to the irritation of worms in the intestines, the indication is evident; but unfortunately we have no vermifuge medicine upon which much reliance can be placed; we believe the best, in these cases, to be pretty active doses of calomel and jalap, preceded by the spirits of turpentine. The latter article has itself been recommended by COPLAND as a remedy in infantile convulsions, especially when dependent upon a deranged condition of the alimentary canal.*

When convulsions are produced by the repulsion of eruptions, or from the drying up of any habitual cutaneous discharge, we should promptly produce irritation of the skin, by means of blisters, stimulating embrocations, or the tartar emetic ointment: the warm bath in these cases will also be beneficial.

If it be apparent that convulsions depend upon some cause which has acted immediately upon the brain, the treatment is not to be "blindly empirical:" we are not at once to resort to large and frequent bleedings, and enormous doses of calomel, without appropriately modifying our treatment to the case, according to individual circumstances. In many of these instances, where the child is of a very weak and delicate constitution, and more disposed to excessive irritation than to inflammatory action, we must rather seek assistance from the soothing effects of the milder sedatives, and cold applications to the head, with sinapisms or blisters to the feet.—p. 144. But if the child be robust and of a plethoric habit, with the head hot and disproportionately large, the carotids throbbing, the countenance flushed, the eyes sparkling, and projecting from their orbits, particularly if he sink into a state approaching to coma, after any unusual agitation, we have, then, reason to fear a hazardous determination of blood to the brain, and we must proceed accordingly. With these symptoms present, whatever may have been the original cause of the paroxysm, local or general bleeding, or both, will be demanded, according to the intensity of the symptoms and the constitution of the child.

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* See London Med. and Phys. Journal. Aug. 1821.

In these cases, we should in general recommend the division of one or both of the temporal arteries. The impression upon the vessels of the brain from this mode of bleeding, is much more prompt, and effected with a much less loss of blood, than from any other; while the operation is far more simple and less hazardous than that of opening the jugular vein in a child labouring under convulsions. Mr. N. very properly objects to any reliance being placed upon the use of leeches, but advises taking blood from the jugular vein, or the application of cups to the temples, or behind the ears. It is impossible to determine, by any abstract rules, the amount of blood necessary to be drawn; this must, therefore, be left to the judgment of the practitioner. We are to be guided principally by the action of the carotids; the violent and continued throbbing of which, even at the moment when the pulse at the wrist is almost imperceptible, will be a sufficient proof of the necessity of still further depletion. p. 150. According to Mr. N., during a convulsive paroxysm, we are to abstract blood only when an undue and dangerous determination of blood towards the head actually exists, and never with the intention of lessening the violence of convulsive action; the violence of these attacks, he remarks, not always being in proportion to the strength of the constitution. p. 139. This rule is far too general. In cases of convulsions of extreme violence, occurring in strong, robust and otherwise healthy constitutions, where there is nothing to effect but reducing the violence and shortening the duration of the paroxysm, as by the continuance or frequent repetition of convulsions, the brain is very liable to suffer, even as a precautionary measure, venesection in such cases would be indicated.

In cases of undue determination to the head, the child, after bleeding, should be kept as quiet as possible; as a state of great irritability frequently succeeds, which from even the slightest exertion, may occasion a repetition of the convulsions. p. 151. The bowels should be freely acted upon, by proper doses of calomel combined with jalap; purgative glysters are also useful auxiliaries. By some practitioners the milder purgatives are preferred to calomel, in the convulsions of children; Mr. N. very properly remarks, that the former, it is true, may produce copious evacuations, but they do not like calomel guard against the intestinal irritation, which is so common in young children, from the quick accumulation of vitiated mucus, nor do they restore a deficient, nor correct a morbid, secretion of the bile. Mr. N. however, deprecates the administration, in these cases, of large and repeated doses of calomel every two or three hours, from an idea that this remedy is capable of acting as a specific in convulsive affections, independent of its purgative properties. What Mr. N. may conceive to be a large dose of calomel we know not; but in every case of violent convulsions, connected with undue determination to the brain, whenever the power of swallowing remains, the article should, undoubtedly, be administered in *a full dose;* and if, on being followed up by castor oil, the compound senna tea, and laxative injections, it does not promptly and freely act upon the bowels, we would consider it highly proper to repeat it to the same extent.

In every instance where symptoms of undue determination to the brain are present, the best effects may be anticipated from the application of cold water to the scalp. The whole of the scalp should be completely wetted with a large sponge, soaked in spring water, and frequently changed; or pounded ice in a bladder may be applied. If, under this constant application of cold, the cheeks become pale, and the head cool, its use should be discontinued, and again renewed, whenever the flushed cheek and heat of the head indicate a local determination: at the same time that cold is applied to the head, the other parts of the body should be carefully kept warm. p. 156. It is a common, and no doubt, highly beneficial practice, with the French physicians, to put the little patient into a warm bath, while cold water, or even ice is applied to the head.*

In cases where there was evident determination of blood to the head, *without any* general excitement, which is a state we frequently observe in children, Mr. N. has seen the best effects from blisters to the calves of the legs, or between the shoulders. Blisters to the head, he conceives, would be decidedly prejudicial. The employment of epispastics to the scalp, in affections of the brain, so common a practice with British practitioners, is very strongly, and we conceive justly, reprobated by the French and German physicians: they, in general, prefer sinapisms, stimulating applications, or perhaps small blisters to the inferior extremities. In the opinion of Mr. N., the British physicians have too little confidence in the powers of sinapisms applied to the feet, when there is a state of great cerebral excitement to be contended with. In many cases, both in children and adults, he has found them very powerful auxiliaries. Of their good effects we can bear similar testimony; and we have also, we conceive, derived much advantage from their application over the epigastrium, in many cases of convulsions, even when the brain did not appear to be much oppressed with blood. Together with the foregoing remedies, it is all important, that the *diet* of the child be light as possible. Animal food should be entirely prohibited. The patient should be kept in a darkened room, neither his mind nor body being stimulated by noise or exertion. After we have carried the above plan as far as circumstances will admit, we shall still frequently find a strong predisposition to a return of the convulsions. The determination to the head may be removed, and no apprehension entertained from increased vascular excitement, yet will there remain, frequently, a general state of irritability, in which the brain particularly participates: the child is sleepless, and exceedingly fretful, and its pulse small and rapid, while slight twitchings of different muscles and tendons will be detected on strict examination. For a moment or two the carotids beat violently, and then suddenly with great languor. The countenance is generally pale and distressed, and the brows wrinkled. Under this state of things, Mr. N. considers further depletion absolutely prejudicial; and he recommends, in place of it, the administration of sedative medicines, of which he considers small doses of pulvis Doveri to be the best. He has frequently experienced, also, much benefit from extractum cicutæ, or hyoscyami, in conjunction with alkalies; but these will sometimes fail in relieving the irritable condition of the system, when the pulvis Doveri will succeed.

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* See particularly PIORRY sur l'irritation encephalique des enfans.

Dr. Brachet almost entirely confined himself to the use of henbane, always combining it with the oxydum zinci, varying the doses according to the intensity of the symptoms, and the constitution of the child. Two grains of flores zinci, and four of extractum hyoscyami, divided into four doses, and one given every two or three hours, are the medium proportions for young children. Dr. B. never carried the dose of either article, beyond ten grains in the twenty-four hours.

The foregoing practice may, undoubtedly, be proper under the particular circumstances detailed; but the young practitioner cannot be too forcibly impressed with the impropriety of commencing with opiates, before every symptom of undue determination of blood to the head, local irritation of the brain, or general arterial excitement, are fully subdued, and every source of irritation removed from the bowels. The worst consequences may be apprehended from the effects of narcotics prematurely administered. In exhibiting this class of remedies to children, we should always commence with the utmost caution, and progressively increase the dose: so variable are their effects, especially in infants, that in each case, it is only from the operation of the remedy, that we can determine the propriety of its continuance, or the dose in which it is to be given.

The *diet* of the child, in this state of irritability, should be nutritive, but unstimulating and easy of digestion: our author prefers light solid food, if the child be sufficiently old. When symptoms of acidity in the primæ viæ are present, alkaline medicines will be of great service. Light tonics will then also be required; as infusion of columbo or gentian, combined with infusion of rhubarb and the carbonate of soda. p. 168. The German practitioners extol highly the oleum succini, in cases of great infantile irritability unconnected with local disease.

Where convulsions return from force of habit, and from nervous irritability, unconnected with any serious local affection, the oxide of zinc combined with cicuta may be employed with much confidence. p. 169. Brachet, in several cases, entirely prevented, by the long continuance of a similar prescription, the return of convulsions, to which the child had been subject for a very considerable time. Mr. N. has found much benefit from sulphate of quinine, combined with extractum conii or hyosciami, where a great predisposition to convulsions existed, from considerable debility and irritability of constitution. In two or three cases, when he has seen children in this state of weakness and irritability, with every symptom of approaching convulsions, Mr. N. has reason to believe, the experiment of compressing the carotids has been attended with good effects: he recommends its trial in all cases of a threatened paroxysm, where the symptoms do not demand, or would not justify blood-letting. Dr. **Parry** has referred, with approbation, to the practice, in the treatment of adults; and Dr. **Bland** has published two cases in which it was had recourse to in children, with the most gratifying results.*

When convulsions have been produced by the excessive loss of blood, cold applications should be made to the head, which part should be elevated considerably by means of pillows; the bowels should be gently acted upon; and we may administer, with much confidence, small doses of carbonate of ammonia with extractum conii or hyosciami, according to the age of the child. The most perfect tranquillity of mind and body should be enforced, and the chamber kept darkened. p. 191.

If we have reason to believe the convulsions have arisen from the imprudent use of opiates, it is all important not suddenly to omit them, but gradually to discontinue their use. p. 184.

When convulsions occur in children in the course of febrile diseases, we are advised by many authorities to apply blisters freely. Mr. N. cannot conceive the principle upon which this practice is recommended: he strongly objects to the use of blisters in all cases of general fever and local inflammation occurring in children. "If blisters, indeed, were never applied to children, in any case whatever," he considers that "much less evil would arise from the want of them, than is, in common practice, daily, or perhaps hourly, inflicted by their use." p. 203. Cases of coma, from presumed oppression of the brain, are *those only* in which he will allow that any degree of reliance can be placed upon blisters in infantile diseases, and in which we need not apprehend from them *bad effects*. p. 204. We confess that we are not now in the habit of resorting to blisters so frequently in the febrile and inflammatory complaints of children, as during the first years of our practice: the reason has been, because we have found the extensive application of leeches very generally to obviate the necessity of their employment. Nevertheless, we insist upon it, that cases of general fever, as well as of local inflammation, do occur, in which blisters, subsequent to due depletion, constitute an indispensable remedy: in such cases, we have employed them sufficiently often to know, that, when judiciously timed, they are productive of the most beneficial effects. We would not pretend, however, to advocate their application, *merely* because convulsions are present.

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* Medico-Chirurgical Journal. April, 1819.

Dr. CURRIE has asserted, that from eight years experience, he has found the cold bath very efficacious in removing the convulsions of children, from whatever cause they may arise: he has more reliance upon it, however, in cases of general convulsions, than when the attack is partial. Mr. N. confesses he would be unwilling to plunge a child of a delicate and enfeebled constitution, labouring under convulsions, into a cold bath; and we should consider it, in most cases of infantile convulsions, a hazardous experiment. When, after repeated attacks of convulsions, the strength of the child is broken down, and the recurrence of the paroxysm appears rather to be dependent upon the force of habit, and nervous irritability, than upon any local cause of irritation, the cold bath employed once a day, together with change of air, and tonic remedies, will then be indicated. When the constitution, however, is much enfeebled, we shall rarely, if ever, be justified in plunging the child into a cold bath, without preparation. We should then commence with water of a tepid warmth, and gradually lower the temperature, according to the effect produced. In more than one instance, Mr. N. has known children thrown into convulsions, from the excessive agitation they have suffered at the anticipation of the cold bath. p. 180.

During a paroxysm of convulsions, Mr. N. considers, that opiate frictions upon the chest and abdomen, may be of much more service than any internal remedy. The external use of opium, in cases of infantile convulsions, is highly spoken of in the 5th volume of the Journal General de Médécine, p. 148.

Some writers have recommended us to act, purposely, upon the mind, in order to cure convulsive affections. The occasional success of this experiment has been more than once recorded. Such a practice should, however, be always viewed as dangerous and unjustifiable. p. 89.

Capuron informs us, that chronic convulsions have been cured by the appearance of the crusta lactea; and it has been suggested by Professor Œtinger, that children might be inoculated with the humour of this disease. We know not that the experiment has ever been tried. M. Husson, in his researches on the vaccine disease, has recorded two cases, in which the appearance of the vaccine vesicle entirely freed the patients from convulsions, to which they had been subject for several months, and which had resisted all the ordinary methods of treatment. Similar instances may be found in the French reports on vaccination, from 1812 to 1815, inclusive.

In the course of his treatise, Mr. N. more than once speaks, in rather vague terms, against the too long continuance of active purging in children; to which he ascribes the most serious injury as a consequence. Dr. W. Nichol has adverted, we are informed, to this subject: he has seen the erethismal state of the brain,* which he considers to be the frequent cause of convulsions, kept up, if not induced, by powerful purgatives, which, in common practice, are repeatedly given *where there is no indication* for their employment. p. 177. While we admit the impropriety of, and injurious consequences resulting from, excessive or unnecessary purging, under any circumstances, and in all diseases—while we can easily conceive, that the morbid irritation from the inordinate action of powerful purgatives may be either the predisposing or exciting cause of infantile convulsions, yet we must at the same time insist upon their free, active, and even "continued," but judicious use, in many of the convulsive diseases of children. Their proper employment, no doubt, requires much judgment on the part of the practitioner; but this is a proposition equally true in respect to every active remedy.

The means of guarding against, and, in some measure, of counteracting the predisposition of children to convulsions, will depend entirely upon a judicious course of conduct, pursued from the hour of their birth, in relation to their diet, clothing, exercise, cleanliness, the air they breathe, and indeed every circumstance connected with their moral and physical education. Some highly judicious but very brief remarks, in regard to some few of these points, will be found in the work of Mr. N., copied principally from Struve:—we have not sufficient room to allow us to notice them.

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* By *erethism* of the brain, this author indicates a peculiar *irritation*, independent of inflammation, of "the cerebral structure," or of "any perceptible increase in the quantity of blood that flows through the cerebral vessels." North, p. 122.

Infantile Epilepsy.—This constitutes the subject of the third chapter of Mr. North's essay. We find nothing, however, in the author's remarks very new, or which tends in any manner to throw additional light on the pathology or treatment of this truly afflictive disease. For this reason, and from want of room, we shall not consider them.

In the fifth and last chapter of this treatise, Mr. N. describes a "*peculiar disease, dependent on a spasmodic affection of the chest and larynx, in young children, accompanied by general or partial convulsions.*" Many instances of this very distressing variety of convulsive affections have fallen under his notice. The "acute asthma" of Millar and Chalmers bears, in many respects, a strong resemblance to it; though evidently not the same disease. It is believed the term "chronic croup" has frequently been applied to the affection to be described. The premonitory symptoms occur at an uncertain period, generally between the third and seventh month. At first, they may not be sufficiently striking to attract the particular attention of the friends, though the practitioner, who has met with similar cases, may with much confidence predict from them the series of symptoms which is subsequently to be developed. When the child awakes from sleep, the breathing is, for some moments, unusually accelerated, and accompanied by that kind of noise which an increased secretion of mucus in the respiratory passages would produce. If previously in good health, the characteristic rotundity of feature observed in infants, quickly undergoes a remarkable change, the countenance becomes anxious, the sides of the nose are drawn in, the face is pallid and emaciated, the child frowns almost constantly, and when put to the breast, it sucks greedily for a moment, but suddenly ceases, throwing back the head with violence. Whatever may have been the previous condition of the bowels, they now become constipated. A considerable time may elapse before any remarkable change takes place in these symptoms. A convulsive affection of the hand is usually the next morbid sign which excites attention. The thumb will be found constantly and firmly pressed upon the palm of the hand; the wrists and ankle joints are rigidly bent inwards; the head is almost constantly thrown backwards, by which the anterior muscles of the neck are kept painfully upon the stretch. The inconvenience at the moment of waking is not now a mere acceleration of the breathing; this symptom continues in an aggravated degree, but the inspirations are attended with a loud crouping noise, which may be heard in an adjoining apartment. The chest and larynx appear to be painfully constricted; the heart palpitates violently; the child sobs, but during the paroxysm, never cries in its natural manner. So great is the difficulty of breathing, that sometimes it appears to be totally suspended for a few seconds; the countenance being unusually pale, as in a state of syncope. Sometimes, but more rarely, it is dark, and the vessels of the face turgid, as in apoplexy. The child has frequent attacks of convulsions, during which the features are much distorted. The whole body is sometimes, but more rarely, implicated in the convulsive movements. The paroxysms vary in duration and violence. In the child of Mr. LAMBERT, the convulsions were very severe and frequent, and the state of opisthotonos was so complete, that for many days the head and heels were the only parts which touched the bed. The anxiety of the countenance, at first only occasional, becomes, in the progress of the complaint, constant, and very strongly marked. The brow is constantly knit. In the majority of cases no sustained febrile action is to be detected, nor is there usually any indication of particular determination of blood to the head. In two cases, however, Mr. N. has met with both, in addition to the usual train of symptoms. In several instances Mr. N. has known the prominent symptoms of the disease continue, without intermission, for many weeks. pp. 254—9.

In many cases it may be difficult, or even impossible, to assign the probable cause of this frequent variety of convulsive affection. Our author believes it to be frequently immediately connected with painful dentition. He has known, in several instances, all the symptoms gradually disappear upon the appearance of the teeth; and instant relief will frequently be afforded, if the teeth are sufficiently advanced to admit of the gums being freely divided. The disease very seldom terminates fatally. Mr. N. has met with but one such case. In this instance, dissection discovered the vascular system of the brain morbidly turgid, a small quantity of blood effused under the dura mater, in several places, and a small quantity of blood effused in the ventricles. The whole cerebral mass was particularly firm; the cerebellum softer than usual. The thorax was not examined. The only morbid appearance in the abdomen was seated in the liver; its whole substance was firm, and upon its upper surface were three white spots about the size of a sixpence, which felt, on passing the scalpel over them, like cartilage. During life, no symptoms were observed in this case, indicative of increased determination of blood to the head. p. 265. CAPURON, who has described the disease more nearly than any other writer with whose works Mr. N. is acquainted, observes, that upon dissection, no traces of inflammation are to be discovered; neither is there any collection of mucus met with, in the aerial passages, or in the lungs.

The disease before us has, occasionally, been confounded with croup; but it is essentially different from it. A very moderate share of attention and practical knowledge, will be sufficient to prevent the two maladies from being mistaken for each other. p. 263.

The pathology of this painful and obstinate affection is still doubtful. The great frequency of it certainly renders it a subject well worthy the mature consideration of every practitioner engaged in the treatment of infantile diseases. In a note to p. 271, Mr. N. remarks, that while his work was passing through the press, a case occurred to his notice, from which it must be inferred, that the peculiar train of symptoms which have been detailed, are sometimes intimately connected with derangement of the digestive organs; the disease entirely ceasing upon a free action being produced upon the bowels by purgatives.

In regard to the general treatment, the disease being in a great majority of cases connected with painful and tardy dentition, the first important step is a free division of the gums, in every instance in which they are swollen, or much expanded upon the surface. 274. Mr. N. has frequently known all the prominent symptoms of the case instantly to subside upon freely lancing the gums. The gum must be perfectly divided down to the projecting tooth, or no benefit need be expected from the operation. If the lancet, with which the division is made, has been for some time in use, and has lost its edge, relief may, more confidently, be expected. p. 274. A common pen-knife is recommended by HARRIS, and is, indeed, a very appropriate and convenient instrument. A simple straight incision will be sufficient for the incisores and canini, but we should always make a crucial incision when it is our object to liberate the molares. Constipation forms a usual feature of the disease, and must, necessarily, be removed by active purgatives. If we have evidence of hepatic derangement, the stools being of an unnatural appearance, one grain of calomel, each night, may be given with much advantage. p. 277. If danger be apprehended from cerebral derangement, in consequence of the particular predisposition of the child, or the violence and frequency of the convulsive paroxysms, blood must be drawn from the jugulars, or by cups applied to the temples; followed by cold applications to the head, and occasional purgatives; all external or internal stimuli being carefully guarded against. Relief is rarely to be obtained from opiates. If we were to employ a sedative, Mr. N. would prefer extractum conii, or hyosciami. In some cases, where the convulsive breathing and violent action of the diaphragm are very great, frictions upon the chest, with a liniment composed of laudanum, spirits of camphor, and soap liniment, three or four times a day, have certainly proved useful. p. 280. From the application of blisters Mr. N. has never known any relief to result. After the more severe symptoms have passed off, the child will still be found, in some instances, even for several months, to awake from sleep with short and convulsive breathing, and an appearance of much agitation. In more than one case, Mr. N. has known the attack return, with all its original severity, in consequence of the infant being suddenly awakened, either by accidental noise, or by the imprudence of the nurse. It is of importance, therefore, that those who have suffered from this disease, be roused from their sleep with gentleness and caution.

RETROSPECTIVE REVIEW.

ARTICLE IX.—*Elementa Physiologiæ Corporis Humani. Auctore* ALBERTO V. HALLER, &c. &c. Lausannæ, 1757—66. Tom. VIII. 4to.

THIS immense literary enterprise, the completion of which cost its excellent author six and thirty years of the most vigorous part of his life, has hitherto yielded to him only a portion of that reputation, for which he toiled so laboriously: it is grievous to think, that so much labour, and so many sacrifices, offered at the shrine of medical reputation, should have left to DE HALLER, after the lapse of about fifty years, only that indistinct and undefined renown, which is possessed in nearly an equal degree, by many an ancient sage, whose name has been borne down to our later times by the faint whispers of tradition. The *name* of HALLER is occasionally pronounced, perhaps with some vague allusion to his doctrine of irritability, or with a heartless comment on the size of his great work; while that work is scarcely consulted, almost never read, and frequently not heard of, by practitioners of an art, whose interest and extension was the fondest wish, and successfully employed nearly the whole lifetime, of its amiable and accomplished writer. The breath of popular favour, which once sounded his fame through every part of the civilized world, has almost forgotten to breathe it, and the solid basis of imperishable renown, which he laid in this great effort of patient toil, has been seized on by others, and appropriated to new and more fantastic superstructures; but posterity will clearly distinguish the Doric truth and simplicity of the great original, amid all the embellishments which a less classic taste has impressed upon it. Future ages will regard him, as he may be justly regarded, as the reformer of medical science, and the founder of physiological pathology, as distinguished from the chemical, mechanical, and psychological phantasms of the ages which preceded him.

It is a standing reproach to British and French medical literature, that no translation of the Elements of Physiology has ever been made into their respective languages; and we can hardly persuade ourselves, that not more than ten or fifteen copies of it are extant in the United States of America; a circumstance not owing to any impossibility of procuring it, for many editions have been published, all equally good, and at a price which puts it within the reach of almost every student.*

At the commencement of the eighteenth century, STAHL and HOFFMANN, the leading teachers of the period, were busy in maturing and promulgating the psychological and mechanical doctrines of physiology; which, being mere systems, devoid of any solid or substantial basis of observations and experiments, could do but little towards the invention and establishing of a sound pathology. GLISSON had indicated, by his writings on irritability, the true path which might lead them to exact knowledge of the nature and causes of vital action; but the inherent and underived nature of vital activity, was a proposition too much opposed to the Stahlian system, to permit the great psychological apostle to adopt it: and HOFFMANN, satisfied that the contractile phenomena of living bodies must result, by a mechanical necessity, out of the structure of the organs, had no researches to make beyond those physical arrangements, which, by a more perfect development, might illustrate the plans laid down, not in the volume of nature, but in diagrams and lectures.

BOERHAAVE, whose genius and industry, directed in the proper channels of observation, might have done much in reforming the science, attempted in vain, by an eclectic course, to unite the currents of opinion into one harmonious and permanent system; his success was thought to be complete, while by his presence, his eloquence, and personal influence, that theory was sustained and promulgated in every part of Europe: but these influences had hardly been withdrawn, when his illustrious pupil effected the total ruin of the humoral pathology, by firmly establishing that of the solids; a reform which is unquestionably due to his publications on the sensible and irritable parts of the human body.

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* About eighteen dollars the set, in Paris, 1818. Vide BRUNET *Manuel du Libraire*. A copy was sold here in Dec. 1826, for four dollars.

STAHL, HOFFMANN, and BOERHAAVE, had then settled nothing; GLISSON had been neglected or forgotten; and the great question still to be decided was, as it had been from a very early period, whether an immaterial principle, an inherent quality, or some physical necessity, exercises the power of vital contractions in living bodies.

Our former review of the work of GLISSON, placed the opinions of the preceding ages in a sufficiently clear light, to exhibit, at least, the principles on which these discussions had proceeded. He had clearly announced the existence of irritability; but it was left for DE HALLER to reduce that property within its just limits, to explain and illustrate its true character, and by a severe course of observation and experiment, made with the utmost carefulness, and recorded with scrupulous fidelity, to convince his readers, that on this basis depends, in a great measure, all true pathological application of medical principles.

The subject of vital contractility had attracted his attention as early as the year 1739; and his ideas concerning it had, by means of his pupils, become known over many parts of Europe, before he published the celebrated essay on the "sensible and irritable parts of the human body." This paper was read before the Royal Society of Sciences of Göttingen, on the 22nd of April, 1752; and appeared in the second volume of their transactions, in 1753. In this discourse he clearly defines the meaning of irritability, when he says "I call that an irritable part of the human body which becomes shorter if *touched* by some foreign body: it is very irritable if a slight touch, and not very irritable if a strong contact, is necessary to make it contract."

Nothing can be more precise than this definition. HALLER may have been wrong in choosing a word which is liable to so many constructions; but as irritation applied to a nerve, or to the skin or mucous membrane, excites in these several parts no motion, but only sensation, a sufficient line of demarcation was supposed to be fixed for the two properties, irritability and sensibility. A little attention bestowed on this subject, would, however, remove all liability to misapprehension of the respective values or import of these terms; an attention, however, which is rarely given, as we daily have occasion to regret, in view of the uncertainty and looseness which prevail concerning these properties, in writings and in conversation. Sensibility is defined in the following manner: "I call that a *sensible* part of the human body, a contact with which by a foreign body, is made known to the soul; and in brute animals, of whose souls *non perinde liquet*, I call that a *sensible* part, which, being irritated, causes the animal to exhibit manifest signs of pain or inconvenience. That is an insensible part, on the other hand, which, being burned, cut, punctured, and lacerated, even to a degree of disorganization, excites no convulsion, nor any change of posture, in any part of its body."

With this clear and intelligible exposition of his meaning, he proceeds to state, that experiment and observation are alone capable of teaching us to distinguish those parts which are irritable from those which are sensible, and to point out such as possess both irritability and sensibility. With this view, he had been almost incessantly employed; having from the commencement of 1751, made experiments on 190 living animals; besides engaging his numerous friends and pupils in the same objects of inquiry. From these numerous and diversified operations it results, that no tissue of the human body is capable of contracting itself upon the application of a stimulus or irritant, except the muscular fibre; and that whenever this contractile phenomenon is demonstrated, there is proof of the existence of the muscular character; and further, that this contractility, is an *inherent* property of such tissues; the best name for which is *vis insita*, inherent force, or *vis propria*, proper force, characteristic force.

The vis insita of Haller received, in his own day, the name of irritability; not because he even approved of that denomination, which he probably foresaw might produce much confusion and disorder, as has been abundantly verified in after times, when, in order to be understood, it is, and must be, specifically called Hallerian irritability, to distinguish it from sensibility. It was, by Whytt and others, even then warmly contested, that no such force could be proved to exist, and that what he called vis insita, was only a part of sensibility. But De Haller we think has clearly separated them, as we shall attempt to show after him.

The church has pronounced, that the soul is a whole in the whole, and whole in every part—Anima est tota in toto, et in qualibet parte, tota—and Melancthon, citing this creed of the church, admits it to be correct: but he finds no difficulty or absurdity in the opinion, which affirms the existence of a sentient and vegetative soul, which they consider to be a mere *crasis* or *entelechy*.* Such an opinion was entertained by GALEN; who admitted three sorts of souls, or three divisions of one sort, to wit, an appetitive, an irascible, and a rational. The appetitive resides in the liver; and is busy about food, drink, love, and sensual gratifications. The irascible resides in the heart; where it burns with the desire of liberty, victory, power, dominion, glory, and honours. The rational soul, in the brain, is conversant about the love of truth, science, letters, and all moral good. Yet all these sorts of soul, are nothing but a crasis or temperament, a compound of the four primary qualities, varying with the varying predominance of one or another of these qualities, and perishing along with their dissolution. That learned pagan allowed no supremacy in respect of its duration, even to the rational soul, over the irascible and appetitive. "Si igitur," says he, "pars animæ capax rationis, una cum corporis temperamento mutatur, certe, mortalem speciem animæ, non solum gerere morem corporis, sed corporis etiam esse temperiem, censendum est."†

Dr. WHYTT must have been led, we think, to somewhat similar metaphysical conclusions, if he had followed out the doctrine which he lays down, in his treatise on the vital and involuntary motions. In speaking of the one sentient and intelligent principle, as opposed to HALLER's vis insita, he remarks, "that this principle operates upon the body by the intervention of something in the brain or nerves, is I think likewise probable; though as with regard to its particular nature, I presume not to offer any uncertain conjectures. I shall only observe that, perhaps, by means of this connecting medium, the various impressions made on the several parts of the body, either by external or internal causes, are transmitted, and perceived by the mind; in consequence of which, it may determine the nervous influence variously into the different organs, and so become the cause of all the *vital* and *involuntary* motions, as well as of the animal and voluntary. It seems to act necessarily, and as a sentient principle, only when its power is exerted in causing the former; but in producing the latter, it acts freely, and both as a sentient and rational agent."* That is, the soul is a sort of crasis, or temperament, whose actions are the result of a physical necessity, at least in some cases. Certe, mortalem speciem animæ, non solum gerere morem corporis, &c. as GALEN says.

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* MELANCTHON de anima.

† GALEN lib. de anim. morum.

We have cited this, to show how difficult it is for those who propose the human soul as the vital principle, and cause of all irritative contraction, to reason consistently; for even this acute writer has been obliged to sever his one sentient and rational principle, into as many sections as an Aristotelian or Galenical metaphysician would have done; videlicet, into a sentient, a sentient and rational, and a purely rational entity. The extract also serves to put in a proper view the opinions which HALLER had to combat in the establishment of his doctrine.

He could not be satisfied with the complex irritability of GLISSON, who had confounded with that property every sort of contractile phenomenon, whether vital or purely physical; neither could he admit the dominion of the intellectual and immortal soul, which can "survive the wreck of matter and the crush of worlds," over motions, which occur not only in man, but in as large or even greater perfection in birds, in beasts, and in the lowest order of creeping things. He perceived that there are several kinds of contractile phenomena in living bodies, which must be rightly distinguished from each other, before a correct view of the whole can be enjoyed by the physiologist or the physician; that there are parts which have a perpetual, a never remitted tendency to approximation or condensation, as proved by their immediate retraction when divided with a sharp instrument; that this property is independent of general life, and consequently of the soul; that there is a contraction, or tendency to condensation, which we can excite by the application of irritants or stimuli, but which no effort of the will can either increase or diminish; and that there are parts which possess in common this last named property, and the additional property of being excited by the will.

As the phenomena are different, there must be a difference in the nature of the powers. He arranges them under the four following heads:

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* WHYTT's works, p. 153.

1. Vis contractilis in universum.
2. Vis mortua.
3. Vis insita.
4. Vis nervosa.

The first is a mere physical force, or cohesive attraction, possessed in common by animals, vegetables, and minerals, totally independent of vitality, and therefore claiming no special relation to a physiological subject.

The 2nd, or vis mortua, dead force, power of dead animal tissues, approaches more nearly to the cause of muscular action. It tends perpetually, in a *living* animal, to approximate or condense the particles of the tissue which enjoys it; and lasts, in a *dead* animal, as long as the *moisture* lasts; but disappears in the drying of the part which owns it. When a wound is made in the skin, this vis mortua retracts the edges; when a muscle is divided, it also assists in separating the cut surfaces, but is not the sole occasion of the retraction in this case. It keeps the peritoneum in a proper degree of tension; also the mediastinum, cellular tela, skin &c. &c. He expressly informs us, *Physiol.* vol. iv. p. 444, that this force is wholly independent of vitality for its existence; for though it is more manifest in moist living animal substances, it also exists in amputated limbs, in extirpated muscles, and in membranes long after complete death. To this power he also refers that contraction, which takes place when a tendon, piece of skin, &c. are thrown into the fire, and which BICHAT has called crisping force or *crispation*. It resides in every particle of the human body; unless the hardest and softest parts may be excepted, as the bones and teeth, and the brain. The difference between this and irritability, consists in this; that it exerts itself always, it cannot be directly affected by means of irritations, it is not irritable. This vis mortua is, in no discoverable respect, different from BICHAT's *contractilité par defaut d'extension*, or contractility of tissue, as it is called in many places. HALLER does not confound this force with any vital action, but clearly asserts that it is not dependent on life for its existence. BICHAT too expressly asserts, that extensibility and contractility of tissue are independent of vitality, inasmuch as they exist as long as the organ exists*—long after death. While on this same

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* BICHAT. Recherches sur la vie et la mort. p. 77.

[illegible] remarks, “Most authors have confounded the phenomena [illegible] sort of contractility, with those of insensible organic contractility, or tonicity; such are HALLER, BLUMENBACH, BARTHEZ,” &c.

We do not perceive the justice of this charge. HALLER, it is believed, made nearly if not quite as accurate discriminations, on this head, as the ingenious Frenchman: indeed they seem to be nearly of the same mind in relation to it. HALLER, like BICHAT, has shown that a muscle may contract from vis mortua, vis insita, and vis nervosa; or, to use the version of BICHAT, from contractility of tissue, organic contractility, and animal contractility. When the illustrious baron grants to the absorbents, and to many small vessels, the irritable property, he does the same thing that BICHAT does; who makes a discrimination of degree only, between sensible and insensible organic contractility. With what justice then can he be accused of confounding properties in this matter? He has not gone so far as BROUSSAIS; but we reject as mere subterfuge the argument of BROUSSAIS, who attempts to reduce under the head of vital contractility, every movement of contraction, except the molecular movements, which result from the laws of vital chemistry. The resiliency of the brain, the disappearance of the alveoli, the tension of the mediastinum, &c. are not to be reduced under the head of vital contractility, because they are “necessary to the exercise and maintainance of the functions which contribute to the preservation of life.”* A pudding has as much contractility as can be detected in the brain as a whole:—we mean not to include the contractility of its vascular apparatus. We see no particular necessity or philosophy in the belief, that the gelatine and albumen in our skins and blood, as such, is any more alive than the glue in any carpenter's shop. M. BROUSSAIS has carried his doctrine too far, in including under the domain of vital power, all sorts of contractile phenomena: he is even somewhat Stahlian, when he considers the vital power as something which existed anteriorly to the properties, or rather anteriorly to the fundamental property, of the tissues. It is enough to make them proceed pari passu.

The third species of contractile power recognized by HALLER, is the vis insita, or inherent force, commonly called Hallerian irritability.

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* BROUSSAIS' Physiology, 22.

The following is an abstract, much of it in his own words, from the Physiologia, vol. iv.

In living, or recently killed animals, if a muscle be exposed by dissection, there frequently appears a spontaneous, rapid, and vivid motion, by means of which, different fleshy bundles of it are alternately contracted and relaxed, so that the ends of these fibres, by turns, approach and recede from each other.

This movement is not always to be seen in an exposed muscle, but it may always be produced if an irritation be applied to the flesh. This irritation may be a touch, or a prick with a pin, it may be a few grains of salt, or it may be alcohol, or cold air, or heat, or any kind of stimulating substance.

In the long muscles this motion, when once excited, generally is continued with alternate relaxations for some time, growing weaker and weaker until it ceases entirely. But in hollow muscles, when once excited, the contractile movement goes on steadily diminishing the cavity of it, without these alternations.

In like manner with the vis mortua, this inherent force continues after *death;* and seems to have no limit, short of that degree of cooling after death, by which the fat becomes congealed, beyond which state it cannot be excited again.* The vis mortua depends not on the cooling, but on the drying of the tissues for its limit of duration; the vis mortua also cannot be excited by stimuli, which is the essential difference between them. That this property is also different from sensibility, with which he was accused by WHYTT of having confounded it, is sufficiently proved by its existence after death or extirpation: a heart will sometimes contract for hours while lying on a table, or suspended by a string. That it is something independent of the soul or sensibility, is therefore manifest: you cannot cut the soul into aliquot parts, and scatter it in different directions. Irritability differs in its seat from sensibility: some parts which are sensible are not irritable;

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* RITTER, a German physiologist, has supposed, that a muscle not irritable by 100 pair of galvanic plates, may be still made to contract by 200; if exhausted to 1000, it would respond to 2000; and if it would show no sign of irritability to the stimulus of 1,000,000, it would certainly do so by the application of 2,000,000.—*Ed. Med. and Surg. Journal.*

the nerves and brain, which are sensible, cannot be made to show the slightest irritability; the heart, the most irritable of all the organs, is so far devoid of feeling, that sensibility has been denied to it by some writers. Irritability is more widely diffused throughout all nature, than sensibility: some plants possess it: polypi, and many orders of beings, which are destitute of brain and nerve, are in the highest degree irritable. You can destroy the irritability of a part, without much affecting its sensibility. Cut or tie the nerve of any muscle, it no longer feels, but it contracts. Take it out of the body entirely—can it still feel? but it can shorten itself when touched by any foreign body. Apply caustic vapours to a muscle, its irritability is destroyed, but it gives proofs of the most exquisite sensibility. Weak bodies feel more than strong ones. The ratio of contractile power is as the magnitude of the nerves going to a part; that of the sentient power, is as the number of fibrils exposed to the irritation. The degree of contraction produced is not proportioned to the acrimony of the stimulus: the heart's action is more readily excited by inflation with warm air, than by strong acids. Therefore the insensible is moved, and the moveable feels, and perception ought accordingly to be distinguished from contractile power. Hence his famous inference, that there exists in muscles, and in them only, a peculiar force, which gives them their character, is a part of their constitution, underived and inherent—VIS INSITA, commonly called irritability.

By means of this power it is, that the involuntary muscles exercise with so much constancy their vital functions. It occasions the heart to contract on the blood which is thrown into it, and through sleeping or waking, in all the various conditions of a long life, to exercise with so much precision its wonderful rhythm, while the soul is absorbed in busy thoughts, buried in the profoundest sleep, or struggling for a fitful activity under the burthen of a congested brain.

The vis insita of the stomach, intestines, diaphragm, small vessels, &c. upholds their indispensable operations beyond the reach of the caprice of human will; while the vis insita of the voluntary muscles, when stimulated or excited into action by the irradiations derived from the brain through their appropriate nerves, serves to establish and preserve our relations with surrounding objects. The inherent force therefore is possessed by all the muscles, both voluntary and involuntary. The former have received the power of being excited through the nerves and brain; while the latter have received no such power. Hence the fourth sort of force would have been simply vis insita in an involuntary muscle, but is vis nervosa in one subservient to the will. They both depend on the same principle; but the latter is connected by nerves of volition with the brain, and consequently there is need for a discrimination.

Bichat divides the vis insita, which he denominates contractility, into two kinds, to wit: animal contractility, and organic contractility. The former corresponds to the vis nervosa, and the latter to the inherent force; but Bichat further divides the organic contractility into sensible and insensible; yet acknowledges that they differ only in phenomena, or what means the same thing, in degree.

Let us now make a statement of the several powers recognized by Haller, similar to that which Bichat has made; and then a comparison can be drawn between these two celebrated writers, which will show very fairly how they both thought concerning them.

Haller would say, that a muscle may contract, 1. by its vis nervosa, or voluntary force.

2. By means of its vis insita, when its nerves have been cut or tied.

3. By its vis mortua, if the muscle still retains its moisture, after death; and

4. By its vis elastica, or universa, if the organs have become dry.

Bichat cites the example of a muscle in which all the kinds of contractility may be evinced. This muscle may enter into action or be moved,

1. By the medium of the nerves and brain, or by volition; and this is an example of animal contractility, corresponding exactly to Haller's 4th sort, or vis nervosa.

2. By a mechanical or chemical irritation, which occasions a contraction analogous to that of the heart and other involuntary muscles. It is the sensible organic contractility, corresponding to Haller's vis insita, or irritability.

3. It moves by the afflux of blood, bringing nutritious mat-

ter, which occasions a motion in every fibre and molecule; a motion necessary for nutrition as well as for secretion and absorption. It is the insensible organic contractility, or tonicity; and we are somewhat at a loss to state what would have been the opinion of HALLER on this subject; but are disposed to think that he would have arranged this kind of force under his third head, or vis insita; for he has not denied to the small vessels a vital contractile power, although his opinion was by no means firmly settled respecting it. BICHAT himself can only refer his insensible organic contraction to those parts of the muscle—those vessels of the muscle, which are concerned in its nutrition, secretion and absorption; and since he admits this insensible contractility to differ only in degree from the sensible kind, which is the Hallerian irritability, we conclude that the only difference between these celebrated men is a nomenclatural one.

4. A muscle contracts when its belly is divided, giving an example of contractility for want of extension or contractility of tissue; a movement depending solely on structure, not at all on vitality. It is the vis mortua of HALLER.

5. From crispation—the vis elastica.

Upon a review of the several forces which have been mentioned in the preceding pages, it results, that if they comprise all the forces which exert any influence on the mere solids, as relates to their extension or contraction, then there can exist no vital *extensibility*, as opposed to the idea of vital contractility in the movements of living bodies.

Some persons, in reply to this inference, ask the question, why may there not be an active repulsion as well as an active condensation or attraction among the particles of the muscular fibre; but such a question proves nothing, nor does it throw any difficulty in the way of an argument against the existence of a vital repulsion or extension, by means of which a long muscle can be elongated, or a hollow muscle distended. The most that can be contended for is, that there exists a power of relaxation; which is far, however, from being capable of *protracting* a muscle, whose elongation never could be effected except by means of some extrinsic antagonist force. That the heart is capable of distending itself, seems to us a position impossible, with such as have taken the trouble to examine for themselves the movements of this organ in dying or recently dead animals.

The state in which any muscle, in a healthy condition, is placed, after a contractile effort, is necessarily one of relaxation.

Haller has shown that even the involuntary muscles act by alternations of this sort; and if the contractile effort of an involuntary muscle, as of the intestine for example, become ever morbidly increased, there results an interruption of the function of the bowel. Thus, in the protracted state of bilious fever, how often do we find our patients suffering severely from the loss of contractile power in one part of the alimentary canal, while that of another is morbidly increased. In such cases I have found the great arch of the colon excessively distended, while its sigmoid flexure has been contracted to the size of a cord. In the state of health then, there is always to be observed an alternation of relaxation or repose, and action or contraction. The flexor muscles of the leg contribute nothing to the extension of the limb, nor can it be pretended that the extensors contribute to its flexion. The venous blood brought to the heart is propelled with sufficient force to distend the relaxed and now exhausted right auricle; but the auricle contracts on a relaxed ventricle, which, during the interval of relaxation, has acquired enough of contractile power to be irritated by the presence of blood, or the distension occasioned by its presence. To conceive of it as actively dilating itself, and sucking in the blood as into an exhausted receiver, is a notion so absurd that we can not reconcile it in any manner to ourselves, that it should be held by many persons.

That power by which an artery is reduced to its smallest calibre, acts incessantly. Every body now-a-days knows, that the pulse depends on the contraction of the heart, that the exposed artery discovers no lateral motion of systole or diastole, but only a longitudinal one of *protraction*, derived from the impulse impressed on the continuous column of blood at the origin of the aorta. Every artery or capillary, according to its dose of vital power for the time being, has the power of resisting laterally, more or less, the impulse of the heart on its contained column; and hence the small wiry pulse of one stage of disease which may be followed in another stage by a full bounding one. These variations depend only on the resisting power of the vessel or vessels which exhibit them; they prove more or less of contractile power, but they give no proof of an active dilatation.

The vessels in the web of a frog, as we have frequently observed them with a powerful microscope, will contract when touched with spirits of turpentine; so that where three or four globules could move abreast, only two, or perhaps one, will be able to pass after the application of the spirits. This is irritability or vis insita, excited by an irritant; but in accordance with the universal law of the inherent force, this contraction must be followed by relaxation, and the tube which had become so contracted as to pass only one or two globules along its cavity, yields gradually to the impelling forces *a tergo*, so that three, four, or even six may now be seen flowing in it abreast. Take from the cutaneous vessels by a cup, the *mechanical* support of 15 pounds to every superficial inch, and they no longer resist the impulse of the force behind; they become congested, and finally inflamed. The analogy is complete—the diminution of vis insita, or the diminution of mechanical support, yield the same results.

Pour boiling water, or apply a hot iron on the skin. The first effect is to render the part as white and bloodless as the cornea; but when the vis insita excited by the stimulus, is exhausted, the colour returns, and inflammation is soon formed; simply because the dose of vital power in the part has been exhausted in the effort occasioned by the irritant; but when, under these circumstances, you apply Kentish's ointment to the burned part, you, by means of a renewed irritation of a milder kind, gradually effect the disgorgement of the inflamed vessels, by restoring their contractile efforts; and hence, too, the sound philosophy of that excellent practice.

Upon a retrospect of the several forces whose characters have been explained by Haller and Bichat, it is evident that they all tend, within a certain limit, to the condensation of the parts or subjects of them: that is to say,

The vis mortua will always act in the body by condensing its subject, when its cause of extension is removed.

The vis insita, or irritable force, will always contract or shorten the tissue or fibre which owns it, whenever an irritation is applied thereto.

The vis nervosa, which depends on the irradiation of the will, can do no more than increase the contraction of any voluntary muscle. It can never diminish, or prevent, the operation of the inherent force of such muscle; when the will ceases to act, the action of the muscle ceases.

If all these be true, what do we mean by the word irritation? Is it answered, a provocative to contraction, or an exaltation of sensibility in any part? But the eternal law of the vital actions is, that they all tend to condense the tissues. How then is the old proposition, that, ubi irritatio ibi fluxus, to be defended or explained? How can fluids flow into a part, whose vis insita, acted on by an irritant, hath forced the particles thereof to approach each other, to be more dense and of less capacity for the reception of these fluids?

It cannot be as a first result, but only as a secondary result. It is easier to give examples of irritation, than to explain or define what it is. Cold is a powerful irritant of the superficial vessels. The application of cold to an extremity, may be so regulated as to diminish evidently the size of it. The fingers, when under the influence of cold, are smaller than when they are warm. This irritation may so far contract the irritable vessels of a finger, as to prevent a sufficient quantity of blood to pass through them to disengage animal heat, and they actually freeze; and so complete is the exhaustion of their dose of vital power by the irritation of cold, that, if suddenly thawed, they cannot resist the impulse of blood into their now pervious tubes; all their resisting power is annihilated, except that of their tissue, and the blood produces a disorganizing or gangrenous degree of inflammation.

Heat is a powerful irritant; it exhausts the contractile power very rapidly, and the enlargement of vessels exposed to it consequently takes place very soon; but cold requires a longer time to effect the exhaustion of contractile power, unless indeed it be intense; as in the case of frozen mercury, the effects of which are not to be distinguished from those of heated iron.

The application of the doctrine of irritation, *ubi irritatio ibi fluxus*, by the predominant French school, is attended with some disadvantages, which will hinder the progress of the physiological doctrine, among those who will carefully weigh and estimate the several kinds of forces of which we have so often spoken.

M. Broussais saw, through one of his friends' microscopes, the tremulous and confused movement of the red globules in a frog's web, occasioned by the application of a stimulus to it; and he declared, in one part of his physiology, that the first effect of a stimulus, or an irritation, is to diminish the capacity of the vessels of the part, and that when this contraction becomes permanent, it *repels*, instead of attracting the blood into them. This proposition is so consistent with reason and sound philosophy, that we hailed it as one of the truest and most fortunate results of HALLER's labours; for to him we look through all his followers. What was our surprise, however, at finding, in a subsequent page, a note denying and recalling the statement which gave us so much pleasure, and this too without giving one satisfactory reason therefor. If M. B. had looked longer at the web, and applied for a longer space the stimulant of which he speaks, he would have seen the lines of vessels growing paler and paler, and smaller and smaller, until the red globules would have become totally excluded from the smaller tubes. The tremulous movement does occur in some cases, as we have witnessed; but it ceases, and the contractions of every part under the field of vision soon become uniform and decided.

Blood flows wherever irritation calls it, according to M. BROUSSAIS. Thus, in an intermittent fever, the irritation of the primæ viæ becomes sometimes inflammation, and the blood from the most remote part of the body rushes towards this focus. Hence all the phenomena of the cold stage.

How hard to be accepted is this doctrine to one who knows, that the blood, and all the fluids, flow qua data porta, and yet knows that the effect of irritation is to repel the fluids, and not invite them. How much more consonant to experience, to observation, and to sound analogies, is the belief, that the increased contractile phenomena of the superficial or cutaneous capillaries, are the results of some change, some augmentation, effected in the vis insita of these delicate tubes, than that they should be attributed to a kind of entity called irritation, throned in the primæ viæ, and calling the globules by a law which can never exist, a law of vital erection, of active extension, of vital extensibility, which never did effect, nor never can effect, one single phenomenon in any living creature—no not in the iris, or the nipple, or the corpora cavernosa penis!

We pretend not to deny that the phenomena of circulation are augmented in an organ which has suffered irritation, and whose vessels, exhausted of some portion of their contractile force, have again become pervious for the largest column of blood they are capable of passing through their calibers; but to call this by the name of increased action is to mislead the pathologist, is to establish an unsound therapeutics, and to prevent the clear and positive knowledge of the morbid phenomena from exerting its proper influence.

Irritation is not necessarily followed by inflammation; simple engorgement, or congestion, or increased flow of fluids, in any part, may result from irritations applied to them, according as the existing condition of the vis insita may be more or less exactly just.

The contraction of the cutaneous vessels and the interruption of the perspiration, may, in one individual, be only followed by a gently augmented circulation through these vessels, as after a cold bath, while in another an extensive erysipelas may succeed, followed by gangrene and mortification. In the one case the vital power of the part is not so soon or so much exhausted, and the consequent diminution of resistance is not so great; the new efforts of contraction are earlier commenced, and the disgorgement or resolution is easily effected. While in the other case, the loss of contractile or inherent force is more entire, and the subsequent resistance inefficacious, without renewal of the contractile effort, or restoration of inherent force.

Congestions of a general character may exist in any order of vessels; but febrile congestions probably have their seat in the internal veins, and partially also in the deep seated capillaries. Upon what principle can such a condition depend? If it results from increased efforts of distant vessels of a similar or different order, we can reasonably explain the effects of the remedies we apply. Thus, in such cases we apply sinapisms and blisters and rubefacients to the surface, which, by exhausting the contracted vessels subjected to their influence, of some portion of their morbid contractility, permit the internal vessels gradually to repel the fluids by which they are oppressed, and remove the congestion. Such we conceive to be legitimate inferences from the enumeration of motive powers made by Haller, in his essay De Partibus Humani Corporis Sensilibus et Irritabilibus, and in his Physiology.

Such persons as will candidly examine the proofs, which have been for the last seventy years before the profession, of the existence of the several forces enumerated, must come, like us, to the conclusion that to De Haller we are mainly indebted for the present advance and the prospective excellence of the science of medicine; which, without the development of a physiological pathology, would have ever remained a labyrinth of doubts and conjectures, instead of becoming what it hath almost become, one of the exact sciences.

We will close this article with some extracts from the Physiologia; and take our leave with the expression of our earnest wish, that to the physicians of the United States, this work may become, at some very early period, a familiar text book, which shall be found in the library of every American practitioner. After remarking that Glisson gave the name of irritability, &c. &c. he proceeds:

> "I separated this irritability from the vis mortua, the vis nervosa, and the dominion of the soul. I showed that the heart's motion and the contractile movements of the intestines depend solely on this cause. I reduced its domain down to the limits of the muscular fibre." "I have shown it to be always present, and to be often exerted without the intervention of any cognizable stimulus; and that it is capable always of being roused from its state of repose by the application of a stimulus. I made the distinction between the stimulus which may be less, and the movement arising from it, which may be greater. The result of my labours is, that the old term irritability is every where repeated in conjunction with my name. It is acknowledged as a new invention in Germany, by men of the highest rank in science. I however make no boast on this account; and am even willing that the labours of others should be preferred to mine, freely acknowledging how far I am distant from the full light of truth. Some persons prefer the denomination of vital force; which I do not approve, because irritability sometimes endures longer than life. I prefer to call it vis insita or vis propria musculi."—Vol. iv. p. 463.

We have before mentioned that several editions of the Elementa Physiologiæ have been published, all equally good; but we omitted to mention the Auctuarium ad Halleri Elementa Physiologiæ; fasc. iv. Laus. 1782, 4.

In 1777, there appeared at Berne, the eight first volumes of a new and improved edition of the great work, under the title of Partium Corporis Humani Fabrica; but as it was never finished, sixteen volumes having been proposed to be published; it was not much esteemed. See Brunet's Manuel du Libraire.

BIOGRAPHICAL NOTICE.

ARTICLE X.—*Memoir of Dr.* SAMUEL POWEL GRIFFITTS. *By* GOVERNEUR EMERSON, M. D.

WHILST the inhabitants of our new country, under auspices far more happy than those with which it was the lot of our ancestors to be favoured, are now rapidly throwing aside the influence of the old world, and assuming characteristics more suitable to their improved institutions, it is an object of peculiar importance to hold up as models the lives of such of our countrymen as have been distinguished by extraordinary traits of virtue. In the following biographical notice, it is intended to give an honest account of one, who, though not distinguished by those brilliant achievements which dazzle the eyes of the world, endeared himself to his fellow-citizens by his active benevolence and uncommon usefulness.

Dr. SAMUEL POWEL GRIFFITTS, born in Philadelphia on the 21st day of July, 1759, was the third and last child of WILLIAM GRIFFITTS and ABIGAIL POWEL. His parents were members of the religious society of Friends; the tenets of which sect he adopted, and so steadfastly adhered to, as to afford a happy illustration of their influence upon the human character.

The classical education by which he was so well qualified for the study of a liberal profession, he received for the most part in the College of Philadelphia; an institution which, from the changes effected by the revolution, has been subsequently supplanted by the University. He possessed an accurate knowledge of the Greek and Latin languages, and such a mastery of the French as to enable him to speak it with the greatest fluency and correctness.

From the benevolence which predominated in his character, it is highly probable that, in the choice of a profession, he fixed upon the medical as applying most immediately to the relief of human suffering. He studied under the late Dr. ADAM KUHN, professor of materia medica and botany in the College of Medicine, then the only school in America where the science was taught by public lectures. The intimate friendship which commenced at this time and ever afterwards subsisted between him and his preceptor, may be adduced as an infallible evidence not only of his early merits, but of his subsequent good conduct.*

It was during the period of his professional studies that the disastrous battle of Germantown was fought. Restrained by the strictest precepts of his religion from the performance of military duties, humanity led him to commiserate the sufferings of the wounded, and to apply his efforts towards their relief. It is well known that on this event a coincidence of feelings and circumstances led the late Professor WISTAR, then also a youth, to contribute his assistance for the same benevolent purpose, and, it has been said, ultimately determined him to make choice of the profession of medicine.

As a diploma granted on this side of the Atlantic, was not at that time regarded as a sufficient distinction or qualification by those who aimed at the highest honours of the profession, it was more common than at present for graduates to visit the schools of Europe. For the purpose, therefore, of reaping all the benefits to be derived from abroad, he crossed the Atlantic in the year 1781.

Proceeding first to Paris, he remained there some time in attendance upon the lectures and the practice of the hospitals. But the metropolis of France could not then boast of that supremacy in the various departments of medicine, which is now justly conceded to her; and the school of Montpellier still supported a pre-eminence so early acquired and so long maintained. He therefore repaired in the fall of 1782, to this southern seminary; and having attended a course of its lectures, devoted a portion of the ensuing spring to a tour through that interesting section of Europe.

Returning to Paris by a different route, he soon after directed his steps to England, and reached London in June, 1783. Here he availed himself of all the opportunities for collecting information which were offered, until the following autumn, when he repaired to Edinburgh, which was then, as it is now, the chief seat of medical science in Great Britain. The eminent advantages held out by this school may be estimated from the names of its professors, the several chairs being then filled by CULLEN, MONRO, GREGORY, BLACK, and HAMILTON.

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* For an interesting and faithful biographical notice of the late Dr. KUHN, written by Dr. GRIFFITTS, see the Eclectic Repertory, vol. viii.

In the spring of 1784 he returned to London, soon after which he embarked at Portsmouth for his native country, and arrived in Philadelphia early in the fall, after an absence of about three years.

With the superior qualifications which he now possessed, he commenced practice in his native city; where he soon displayed strong proofs of the maturity of his talents; and to these added a striking evidence of the natural benevolence of his disposition, by his successful exertions in establishing the PHILADELPHIA DISPENSARY.

The chief design of this charity, was to afford medical relief to such of the poor, whose former circumstances and habits of independence, would not permit them to expose themselves as patients in a public hospital, when afflicted by diseases. It was the first institution of its kind established in America, and was founded early in the year 1786, without any other patronage or support than the voluntary contributions of many excellent citizens, and the gratuitous attendance of humane physicians. That Dr. GRIFFITTS was the first person who actively engaged in the establishment of a Dispensary in Philadelphia, rests upon the most respectable testimony. But the credit of having originally proposed the plan, he has very ingenuously ascribed to another, in a short manuscript written by him, and left among his papers. This record states, that "in the spring of 1785, Dr. HENRY MOYES, who was then in Philadelphia giving a course of lectures upon Natural Philosophy, proposed to some persons of his acquaintance there, the instituting a public dispensary for the medical relief of the poor, much on the same plan as those of London and other large cities of Great Britain. The Doctor drew up the plan thereof, assisted by S. POWEL;* but on account of his short stay in Philadelphia, delayed making any further progress in the business, except talking of it amongst his friends, and desiring me to keep it in mind, and to look out for a proper house." He further states, that on the return of the Doctor to the city, the subject was again revived; and after several conversations between Dr. Moyes, S. Powel, Drs. Rush, Hall, Morris, and himself, a plan was agreed upon by them, and the institution organized. The first meeting of the managers and physicians was held at the City Tavern, on the 10th day of February, 1786; when it was resolved on as the first step, that the managers and physicians should collect subscriptions; in doing which, several of them succeeded so well, that at the next meeting, on the 24th of the same month, they had obtained 320 subscribers.

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* The uncle of Dr. GRIFFITTS.

It deserves record as a remarkable fact, that, during its primitive obscurity in Strawberry street, and its subsequent more eligible location in Fifth street, he was, with very few exceptions, a daily visiter of the Dispensary for more than forty years; a circumstance in itself sufficient to account for the prosperity of the institution, and the uncommon regularity with which its affairs have been managed. In addition to his duties as manager, he discharged the laborious office of physician to that institution for seven years. Satisfied when he saw the establishment ably fulfilling the objects for which it was instituted, he seemed anxious to shun notoriety, and every thing like public commendation. His great ambition was to effect the most good with the least show. The beautiful sentiment applied by Sallust to Cato—*esse, quam videri, bonus malebat*—happily illustrates the christian spirit by which he was always actuated.

In the management of the Dispensary, he was peculiarly fortunate in being associated with men eminent for their endeavours to promote the welfare of society. These, in often yielding to a colleague the duties that they themselves would willingly have performed, consulted the prosperity of the institution which they knew would be best secured by his faithful superintendence. Their sense of his services is expressed in the following Resolution, offered by the venerable President Bishop White; who, at their request, transmitted a copy of it to his family:

"Resolved, that the managers will, at their next meeting, proceed to the election of a Secretary, in the room of Dr. Griffitts, lately deceased; the loss of whom they deeply regret, and of whose faithful and important services during more than forty years, they will retain a grateful remembrance."

In the year 1816, thirty years after the institution of the first Dispensary in Philadelphia, the extended limits and multiplied population of the city, and consequent increased number of the poor, rendered it necessary to establish two others, one for Southwark and one for the Northern Liberties. In the foundation and support of these additional charities, he took an interest and an active part, not less perhaps than he displayed in the origin of the first; so that he may be fairly considered as the father of the Dispensaries of his native city.

In the same year in which he was so actively engaged in establishing the Dispensary, he joined the Humane Society, instituted for the purpose of rendering timely assistance in cases of suspended animation, and encouraging efforts to restore life. This institution always received a large portion of his attention. He was likewise chosen a member of the Philosophical Society, of which Dr. FRANKLIN was then President. In the following year the College of Physicians of Philadelphia was founded, he being one of its original members.

The particular interest which he entertained for the College of Physicians, was evinced by a constant attendance of its meetings, from its first organization until his death; during which time he rendered it the most efficient services, both as a zealous member and faithful officer. In 1817 he was chosen its Vice President; an honour which he retained until his death.

Strongly impressed with the belief, that great advantages would result to the medical profession in this country from the adoption of a National Pharmacopœia, he entered warmly into the project when it was brought forward. For this object a convention of the middle states met on the 1st of June, 1819, in the chamber of the College of Physicians of Philadelphia; and closed its session on the 4th inst., after having made what was deemed a proper selection of the several articles and preparations, and appointed delegates to represent the middle district of the United States in a general convention, for the formation of a Pharmacopœia, to be held at Washington, on the 1st of January, 1820.* The College of Physicians having appointed him a member of a committee to prepare an Essay of a Pharmacopœia, to be laid before the general convention, this arduous task was chiefly performed by him; and had the work been published in this city, under his superintendence, it would no doubt have come from the press without the necessity of that extensive list of errata which was subsequently drawn out by his own hand.

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* The convention of the middle states was composed of delegates from

In the pursuit of knowledge, he never permitted himself to be borne away by those ingenious speculations and sophistical arguments, which, in scientific works and associations, are so often advanced and plausibly supported. Endowed with a clear perception and sound judgment, his mind was always directed to subjects of practical utility. Upon these, and especially upon such as were connected with his profession, he was always capable of contributing important information. He was a diligent reader, and never allowed himself to be left in the rear of the march of improvement. Unlike those whose learned pursuits are for the most part limited by mere selfish gratification, or the pride of possession, his main object was to attain that which might be applied to some useful or humane intention.

In the great pestilence which, in 1793, desolated Philadelphia, he remained in the city, actively engaged in extending professional aid to the sick, except when labouring himself under the disease. Nor was it alone in this season of calamity that he remained firmly at his post, and performed the most laborious and hazardous services. In the memorable epidemics of 1797, '98, '99, 1802, and 1805, he stood in the midst of the desolation, and regardless of personal danger, was solely intent upon extending relief to his suffering fellow-citizens, who, wasted by pestilence in darkness and at noonday, were falling on every side. In 1798, he united his own exertions with those of the late Dr. RUSH, in preparing and publishing accurate directions for the prevention and

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the following societies, viz:—The College of Physicians of Philadelphia, the Medical Society of the State of New York, the College of Physicians and Surgeons of the city of New York, the College of Physicians and Surgeons of the western district of New York, the New Jersey Medical Society, the Medical and Chirurgical Faculty of Maryland, the Medical Society of Delaware, and the Medical Society of the District of Columbia.

treatment of the prevailing fever; which, under the sanction of their names, they affectionately recommended to those who were unable to procure the regular advice and attendance of physicians. Surely nothing can more strongly recommend a physician to grateful remembrance than such meritorious acts and magnanimous devotion; and when we take into consideration the nature of the calamity, and all its distressing accompaniments, we can readily appreciate that affectionate ardour of the Athenians, which, for services rendered by HIPPOCRATES, in one of their plagues, led them to bestow upon him a golden crown, and to honour his memory with divine festivals.

The distress which, in the year 1793, fell upon the former proprietors of St. Domingo, in consequence of the successful insurrection in that island, furnished an additional opportunity for the display of his benevolence. Most of the French who were driven by this event to seek refuge on our shores, had on their arrival little else to boast of than their lives. Their strong claims for assistance were liberally answered in Philadelphia, where in a short time 12,000 dollars were collected for their relief. On this occasion Dr. GRIFFITTS made himself very active, both in procuring the means and appropriating them to the necessities of the sufferers. He was particularly qualified for this last office, by the facility he possessed of making himself intimately acquainted with their situation and circumstances. Besides the money collected by himself, he was entrusted with the distribution of large sums raised by public or individual bounty. The part which he bore in alleviating the sufferings of the unfortunate French emigrants, both in 1793 and several subsequent years, left an impression which I have often heard them express with tokens of the most heartfelt gratitude. A circumstance which we may here introduce, is calculated to throw a very strong light upon his character. It might reasonably be supposed that his constant intercourse for several years with the French refugees, the forlorn condition to which they were reduced, and the distressing and sanguinary details they had to relate, would be directly calculated to inspire a hatred of the successful conspirators which no philanthropy could overcome. Such, however, was not the result. Deeply as he sympathized with the vanquished, he continued to the day of his death to evince a strong solicitude for the general welfare of the present masters of Hayti; forwarding to them gratuitously, by every favourable opportunity, supplies of fresh vaccine virus, without which that island would be almost deprived by the nature of its climate, from sharing in the advantages of JENNER's discovery.

In the year 1790, he joined the "Pennsylvania Society for promoting the abolition of slavery, the relief of free negroes unlawfully held in bondage, and improving the condition of the African race;" a charter for which had been obtained the year previous. The objects embraced by this association, he always had very much at heart. The community of feeling which subsisted, on these subjects, between him and GREGOIRE, bishop of Blois, the famous champion for the abolition of negro slavery in France, led to a long continued and intimate correspondence between them.

Dr. GRIFFITTS was always a strenuous advocate for the salutary modifications, which for many years have been gradually finding their way into the penal code of his native state, and felt the most lively interest for the success of the humane system of punishment, which has been finally adopted, and is now about to be applied on a scale well calculated to test its efficacy.

In the year 1792, he was chosen professor of materia medica in the University of Pennsylvania; and during the four years for which he filled this chair, his lectures evinced great industry in the acquisition of useful materials, method and perspicuity in their arrangement, and zeal for the advancement of his class in solid information. But the situation of a public lecturer was not altogether congenial to his feelings; which were most gratified by an active discharge of the less conspicuous duties of private life. Perhaps too, the disinclination which he always manifested to hold any place of emolument, may have exercised some influence in producing his resignation of a chair, which was every year becoming more profitable, and even at that period conferred one of the highest honours within the reach of his profession.

Dr. GRIFFITTS was one of the first to appreciate the importance of vaccination, and to introduce it into this city; and in no way did he display more zeal and industry than in advocating and spreading, by every means in his power, the blessings flowing from this inestimable discovery. Besides what he accomplished in his individual capacity, he was an original member and active promoter of the Vaccine Society, instituted in the year 1809, by a number of benevolent citizens, who formed themselves into committees, and sought out the objects of their Association among the poor and obscure inhabitants of the City, Southwark and the Northern Liberties, persuading them to submit to vaccination, which was performed at their own dwellings, by physicians appointed by the Society.*

Of the various afflictions entailed upon mankind, that of mental derangement makes the strongest appeal to humanity for sympathy and assistance. We might therefore reasonably expect to find Dr. GRIFFITTS actively engaged in some plan for the relief of individuals and families suffering from the effects of this dispensation. Accordingly, when, in the year 1811, proposals were made to the Philadelphia yearly meeting of the religious society of Friends, to make provision for such of their members as were deprived of their reason, he eagerly embarked in a subject which had already occupied his mind for many years. The information he had previously acquired, the zeal by which he was actuated, and the persevering disposition for which he was so remarkable, qualified him peculiarly for rendering the most essential aid towards an establishment of the nature proposed. The highest expectations of him were fully realized. It was agreed upon by the society, that an establishment should be formed, and placed under the direction of such members of the Philadelphia yearly meeting as might become contributors. The original plan was drawn up by him, and he took a most active part in all the arduous duties connected with the erection of the extensive buildings, and the necessary arrangements for the reception of inmates. The site selected was a retired situation, five miles from Philadelphia, and one from the village of Frankford. As it was contem-

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* The important results arising from this association, in checking the mortality and lessening the evils of the small pox, is strikingly demonstrated by the annual official reports of the Board of Health; from which it appears, that there died of this loathsome disease, in the city of Philadelphia, Northern Liberties and Southwark,

In 1807	- -	32 persons,	In 1810	- -	140
1808	- -	145	1811	- -	117
1809	- -	101	1812	- -	NONE.

plated that this institution should embrace many improvements upon the usual methods of treating the insane, much previous deliberation was called for by those who had charge of its foundation. This admirable institution, such as it was formed by the joint labours of himself and his valuable colleagues, amply attests the judgment and wisdom which guided its projectors and managers.* Let those who wish to view the pleasing but melancholy spectacle of the insane divested of their long known accompaniments, fetters, manacles, and chains, and treated in a manner so lenient and soothing that necessary restraint is almost concealed by the air of retirement, serenity, and comfort which surrounds them, repair to the FRIENDS' ASYLUM near Frankford.

In stature Dr. GRIFFITTS was about the middle size; and although his constitution was by no means robust, it was nevertheless capable of supporting considerable fatigue. As the best proof of this, we may mention, that although his practice was very extensive, yet he always visited his patients on foot. Such indeed was his predilection for walking, that he never could be induced either by the entreaties of his friends, the increased extent of the city, or the advance of age, to adopt the usual method of riding.

He was extremely plain, abstemious, and regular in his mode of living; which, with the free exercise he took in attending to his patients, no doubt contributed greatly to the preservation of his health. His dress was such as became an elder of the religious society to which he belonged; and conformed with the simplicity and dignity of his manners and character. Free from even a shade of affectation or ostentation, his deportment was distinguished for its ease and courtesy.

The situation of a physician, who, in the performance of his duties, is liable to be called upon at all hours of the day, does not readily admit of that accurate distribution of time which is allowed by many other avocations. Upon this account, the extreme regularity acquired and maintained by Dr. GRIFFITTS, in all his habits and pursuits, forms a more distinguished trait in his character. He was an early riser, and always began the day by reading a portion of the New Testament in Greek or Latin. Impressed with a deep sense of the paramount obligations of religion, he was seldom known to be absent from the meetings of worship or business of his society. The punctuality with which he visited the Dispensary, has been already remarked, and as an additional proof of the regularity of his habits, and a striking example of parental solicitude, we may mention, that it was his uniform custom to visit daily such of his children and grand-children as resided in the city. But it was in his professional engagements that his punctuality shone forth most conspicuously. Rarely indeed did it occur, that in keeping the time set for consultation, or other purposes, he was so long as five minutes from the hour appointed. This strict observance of such engagements, he regarded as one of the cardinal virtues of a medical practitioner, considering all violations of it as so many deviations from truth, productive of endless inconvenience. The example of his preceptor, whose conduct in this respect, during a practice of half a century, has perhaps never been surpassed, was well calculated to confirm him in the same habit.

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* A detailed and highly interesting account of this institution, will be found in the Philadelphia Journal of Medical and Physical Sciences, for August, 1825.

In his consultations with other physicians, his conduct was ever open and ingenuous; whilst the thorough knowledge he possessed of the rules and etiquette prescribed by medical ethics, was strongly demonstrated by his scrupulous observance of them.

The practice of Dr. Griffitts was distinguished by closeness of observation, clearness of judgment, and when the occasion required, prompt decision and efficient energy. To the well established principles of medicine, he adhered with great strictness; but was nevertheless always ready to adopt useful innovations, when these were in accordance with the dictates of sound reason, and attested by impartial experiments. His attentions to his patients were sedulous, evincing a strong interest in their welfare, and inspiring confidence of a happy result.

As a writer, Dr. Griffitts had one formidable obstacle to contend with, and this was his reluctance to appear before the public. His communications, which were never made except when drawn forth by a sense of duty, possess an easy, plain, and concise style. Fidelity and perspicuity in narration were more his objects than grace or elegance of composition. He was one of the editors of that highly useful medical journal the Eclectic Repertory; a publication which reflects great credit upon the judgment and talents of those by whom it was conducted, and the suspension of which is a loss to the profession. Among the original papers it contains, are some valuable contributions by Dr. GRIFFITTS; in all of which he has strictly confined himself to a relation of facts, without advancing any theoretical remarks. They are very much condensed, and strongly impressed with that candour and good sense for which he was eminently distinguished.

In the first volume he has evinced the particular interest he felt in the success of vaccination, by giving some very useful observations on the best means of preserving and using the vaccine crust. In the third volume he introduces the subject of blistering as a remedy for preventing and arresting mortification. The sixth volume contains a paper upon the subject of re-infection in the yellow or ship fever of tropical climates; the non-occurrence of which he ably maintains. Among other evidences which he brings in support of his position, he states, that during the seven years of its appearance in Philadelphia, he did not meet with one instance of the same person's having the yellow fever a second time. He was a firm believer in the contagious nature of this disease, and a warm advocate for enforcing restrictions and precautionary measures, calculated to prevent its introduction from abroad. In the ninth volume he has recorded an instructive "Case of supposed aneurism of the right carotid artery;" which is intended as a salutary caution to his medical brethren. It affords a fine specimen of his candour.

In the year 1787, he married Mary Fishbourne, daughter of William Fishbourne, formerly a respectable merchant of Philadelphia. From this marriage six children with their mother yet survive.

The private worth and domestic virtues of Dr. GRIFFITTS will forever endear his memory to his family, and to all who knew him intimately. As a friend, he was kind, sincere, and obliging; as a husband, attentive and affectionate; as a father, fond and indulgent. His piety was founded upon unshaken faith in the doctrines and efficacy of the Christian dispensation, as inculcated in the precepts, and maintained in practice by the religious society of Friends.

Thus, by the purity of his life and the possession of religion, was he happily prepared for the final summons, which on the 12th of May, 1826, so suddenly called him away. For several days previously he felt rather more debility than usual, but continued to visit his patients, although he was unable to attend them all. Early on the morning of his death he complained of some unpleasant feelings about his chest, which he thought might be relieved by bleeding. He arose and began to dress himself. In the mean time, his wife became alarmed and sent for his friend Dr. PARRISH; who, although he attended immediately, found on his arrival the lifeless body of Dr. GRIFFITTS resting in an easy posture upon the bed. Having escaped the infirmities of age, he was thus removed in his 67th year, and, as if through a special interposition of Divine favour, exempted from the ordinary penalties of sickness and pain.

BIBLIOGRAPHICAL NOTICES.

Article XI.—*Observations upon the Autumnal Fevers of Savannah. By* W. C. Daniell, M. D. Savannah, (Georgia,) 1826. 8vo. pp. 152.

It was our intention to offer in the present number a careful review of this work; but we have been unavoidably compelled to substitute a mere notice, which will consist of extracts from it, arranged, however, in such order as to exhibit the principles and practice which it upholds. The advocates of the system of Dr. Daniell are said to be numerous in the southern states; it therefore has a right to the respectful examination of his brethren, the more especially, as the claim is temperately and modestly preferred.

In the introduction to this work, the author remarks, "Although it be my fortune to entertain opinions which have the sanction of neither time nor authority, I cannot with any justice be reproached for convictions, which experience, as diligent and dispassionate as I could make it, has forced upon me. It is true I may overrate the importance of such opinions; if I do, it cannot be doubted that both reproof and rebuke await me."

Dr. Daniell commenced his career as a practitioner at Savannah, in the year 1815; and has had, on several occasions, very ample opportunities to compare the most successful modes of treating the violent diseases which prevail in that climate. "About the latter end of August, and during September, (1817,) there was a very considerable abatement of disease. This arose from an absence of subjects; for towards the close of the latter month, several vessels arrived from Europe and the north. The seamen and passengers which they afforded, very soon became sickly, and with them the fever assumed a much more severe and rapid character. Their numbers were increased from day to day by new arrivals. Here the disease ran its course in two to five days. Evacuants even the mildest could not be borne. There was from the first, great debility. Blisters frequently failed to vesicate. Indeed nothing appeared even for an hour to arrest the disease. It soon became obvious that every attempt to salivate must be nugatory. It was at this time, that I became first impressed with the importance of the LOSS OF TONE IN THE SKIN; and of the necessity of the adoption of some means to restore it." Introduction, viii. After consulting his medical friends concerning the usual mode of treatment, without any fruitful result, he "resolved to abandon a practice which at least in my hands had achieved nothing, and I substituted an infusion of serpentaria with bark." This plan, though his success with it was "not satisfactory, was infinitely greater than with the other remedies which I had previously used." x. In 1820, when Savannah was afflicted with a very fatal epidemic, Dr. D. had an opportunity of laying out a system of treatment, of which the above was only the inception. The work commences with observations on the topography of Savannah, containing some interesting remarks on the sanatory results of a change from wet to dry culture, in the flat or marsh land on the opposite shore of the river. For these we must refer to the book itself.

At p. 47, Dr. DANIELL, after a slight examination of some of the commonly supposed causes of fever, says, "It has appeared to me far more reasonable to suppose, that autumnal fevers are produced by qualities imparted by marsh miasma, to an atmosphere which, thus impressed, impairs the capillary action of the skin, and affects the equilibrium of the circulation; the destruction of which creates an effort in the internal capillaries now surcharged to relieve themselves, *which reaction constitutes fever*. The character of the fever, (other circumstances being equal,) and consequently the speedy production of the disease, depend essentially upon the force of the cause applied. In some instances, the destruction of the external capillary action is so complete and sudden, and the superficial blood so immediately thrown in upon the internal capillaries, that the system is capable of no reaction. In such cases the patient dies in what is called the cold stage," &c.

Our readers will perceive, from the short extract above, the nature of the author's opinion concerning the state of the blood vessels in the fevers he describes; we cannot here afford sufficient space to follow him in his observations on the blood vessel system.

At p. 77, commences an examination of the question "Is autumnal fever inflammatory?" and at p. 90, he says, "To me, it has appeared, that the tendency of our fevers, from their very first access, is to a state of collapse, not from indirect, but direct debility. If this tendency is resisted in the onset, we contend merely with the causes of debility in operation. If we wait until the collapse, and accelerate that by the use of evacuating medicines, we have afterwards to contend against these causes in their maturity, and with their effects greatly multiplied." And at p. 91, "In fine, there is not one unequivocal evidence of inflammation in any one stage of autumnal fever. It is a disease commencing in debility, throughout its progress displaying evidences the most positive of debility, and terminating by the direct extinction of vitality."

An inquiry "Upon salivation in autumnal fevers," commences at p. 94. On this head we can only in our notice, cite the following: "I have already alluded to the great quantities of mercury which were administered in the fever of 1820, in this place. Although it is believed no physician claimed to have saved a single individual from death that season by the production of salivation, it was administered the following season with equal freedom and apparent confidence by most of them in the same disease. I am gratified, however, to say, that since 1822 the mercurial treatment has gradually yielded to my own; which latter, although still condemned, has been to a considerable extent adopted generally. *Sinapisms*, *Bark* and *Serpentaria*, which in 1821, were treated with little deference, are now daily in the hands of all our physicians, when treating autumnal fevers," &c. p. 101.

The "Method of Treatment" commences at p. 103. It consists mainly in the use of sinapisms, capsicum, serpentaria, bark, and Fowler's arsenical solution.

In the application of sinapisms, Dr. D. designs to produce a decided inflammation of the skin, which shall be permanent, as distinguished from the short-lived rubefacient effect of these plasters. He requires, if possible, that the inflammation should not terminate in vesication, which brings about results like those of the cantharis—vesication is an unfavourable circumstance. p. 105. "The sinapisms are habitually applied at the same time to the abdomen, forearms and legs; and are made to occupy as much of the surfaces of these parts as is convenient." 106. "When applied during the exacerbation of fever, or when the heat of the surface is above the healthy grade, (and occasionally at other times,) so soon as they fully produce inflammation upon the skin, there follow, almost invariably, free evacuations, from either the bowels, kidneys or skin, and always to the decided advantage of the patient." 107. "By the repeated application of the sinapism to the same part, the inflammation will be in a few days rendered complete: by which time, frequently, the patient is relieved from all danger, and nothing more is required than the continuance of the medicines for a short time, with proper nourishment," &c. 108.

Next to sinapisms, (in conjunction with which it is frequently directed,) Cayenne pepper exercises the most powerful influence in calming the irritated stomach." 118. It has repeatedly suppressed the black vomit, and in one case was followed by recovery, after this symptom; it removes the dryness of the tongue, checks determination to the brain, moistens the dry skin, and diminishes the cold clammy state of that surface. A table spoonful of pulv. capsici annui is infused in a pint of boiling water. The dose is a table spoonful repeated once in each hour, or *in extremis* oftener. 117—18.

Serpentaria Virginiana requires more caution in its administration than any of the articles used by Dr. Daniell, in the autumnal fevers of Savannah. "Used without the aid of sinapisms, it frequently increases the disposition to delirium; and whenever that is present, it should be rejected." He also uses it in conjunction with the capsicum tea. 121.

Bark may be freely given, in pepper tea, or with infusion of serpentaria, when the skin has been successfully inflamed by the sinapisms. "I frequently give, in severe cases, as much as three or four ounces in 24 hours; where the disease is mild, less than half that quantity. I use it in every stage of the fever, whether of remission or exacerbation, with equal convenience. Once commenced, it is continued throughout the disease, in as large quantities as the stomach will receive; and it is mainly to this mode that I attribute the very general success which has attended the use of it in my hands." The sulphate of quinine has also been successfully employed by Dr. Daniell. 121—22.

Such is the scanty analysis of Dr. Daniell's work which we are able to offer to our readers in this journal.

It can hardly be necessary for us to remark here, that his principles in the management of autumnal fevers, are mainly to produce an increase of circulatory phenomena on the superfices of the body, by inflaming extensive portions of skin with mustard, and to fortify the debilitated system and urge the circulation to the surface at the same time, by infusion of red pepper, by serpentaria, and by bark. Those who, from the present novelty of this plan, are willing to examine into it more deeply, are commended to the book itself, which is in reach of any reader. We have some prospect of presenting to our readers in a future number, examples of cases treated on the plan above described, and must, for want of space, defer our observations until then. A few well registered cases, candidly relating every circumstance from the commencement to the close of the attack, would have enabled his readers to judge much more satisfactorily concerning the new method.

ARTICLE XII.—*A practical Treatise on Diabetes, with observations on the Tabes Diuretica, or Urinary Consumption, especially as it occurs in children, and on Urinary Fluxes in general. With an appendix of Dissections and Cases, illustrative of a successful mode of Treatment, and a postscript of practical directions by examining the urine in these diseases.* By ROBERT VENABLES, M. B., &c. London. pp. 214. 1825.

This is a very sensible work, in which the author has given proofs of a sound practical mind, and no trifling share of experience in the diseases of the urinary organs. He commences by stating that several cases of wasting in children presented themselves to him, in which he was unable to detect any serious or permanent derangement of function in the abdomen, lungs, head, &c., and in which the treatment founded upon the principles of correcting these functions, when deranged, was generally unsuccessful. Accident first led him to discover the real nature of the case. "Upon one occasion, after making inquiry into the state of the different functions, I was given to understand that each was regularly and healthily performed. The head was free from pain, and the functions of the brain regular; the respiration natural, the bowels free, and the secretions from them healthy. Nothing, as I was told, appeared remarkable in the urine; but it was, after some farther examination, stated, that it was discharged in very great abundance; but this was disregarded as unimportant, because the patient consumed a very inordinate quantity of fluid to satisfy the constant thirst with which the little sufferer was harassed." "I felt little difficulty in determining between cause and effect; nor had I any hesitation in referring those cases of evacuation, which I had previously considered as anomalous and unintelligible, to this genus." "On a minute morbid examination, I discovered diseased appearances in the kidneys sufficient to account for all the symptoms."

The next chapter of the work before us is occupied with the symptomatology of diabetes, as this latter appears in children and in adults. We cannot follow our author in this detail; as we take it for granted that the greater number of our readers are already acquainted with the symptoms of this disease. We have only room to recommend the utmost attention to be paid to the condition of the urinary discharge and organs; particularly in cases of children, and in all cases attended with some degree of obscurity in the diagnosis. On the subject of the morbid anatomy of diabetes, which occupies the following chapter, our author remarks, "The morbid anatomy of diabetes is properly confined to the kidneys and urinary organs. Diabetes never exists to any extent, without the kidneys presenting, on dissection, manifest changes. These changes vary from a trifling vascularity to severe organic derangement. Sometimes the kidneys are much inflamed, and present a florid vascular appearance; in other cases the venous system of these organs seems enlarged and turgid with blood."

Mr. VENABLES enumerates among the remote causes of diabetes, all agents which may become an unnatural stimulus to the kidneys; and of the immediate cause, he says, "Dissection has shown that this disease is always attended with some manifest change in the structure of one or both kidneys. Hence we may conclude that a mere functional change is hardly adequate to the production of the permanent disease." After this statement, we are prepared to follow him, though only *a little way*, into his views respecting the pathology of the disease. He combats the opinion of the late Dr. ROLLO; who, as some of our readers may recollect, supposed the cause of diabetes to exist primarily in the stomach, the kidney being the organ through which it manifested its deranged action. So far from admitting this view of the nature of the disease, Mr. VENABLES is inclined to believe, "that diabetes more frequently arises from a peculiar excitement of the kidneys, originating in the direct application of stimuli to their substance. At first, the excitement is only occasional, and the effect subsides; but the repeated irritation of organs, we well know, brings on inflammatory action, and at last disorganization. It has been observed, in discussing the morbid anatomy of the kidneys in diabetes, that they generally exhibit morbid vascular appearances, and frequently considerable disorganization of their structure. The first effect of the irritation is merely an increase of their natural functions; and more urine is separated, than under their natural action would be effected. The qualities of the urine, too, are not affected; or at least not sensibly so, at first, nor until after the repeated application of the stimuli. But by repeated excitement, not only are their functions increased and sensibly perverted, as is indicated by coagulation of the urine, and its saccharine properties, but also their structure and organization become seriously affected." "All the other affections, as of the organs of sense, the head, chest, and abdominal viscera, seem to me to be secondary."

On the subject of the treatment, Mr. VENABLES remarks, that it should consist in reducing the inordinate action of the kidneys, diminishing their preternatural excitability, and endeavouring to correct the perverted functions by which a morbid urine is produced, and, after this is effected, to guard, if possible, against a relapse. These important objects are to be attained by avoiding the exciting causes, whatever they may be, and by direct efforts to remove the affection of the kidneys. From the view which the author takes of the nature of the disease, it will not appear astonishing that he should recommend venesection in its treatment—a remedy often used before him, but oftener neglected or entirely rejected by practitioners, from their extraordinary fear of debility. When it is impracticable or unadviseable to use the lancet, cups are recommended by him, and leeches by us. Blisters or caustic issues may also be used, but particularly after the abstraction of blood. The state of the bowels and skin should be paid attention to, and any suppressed or vitiated secretion corrected. Opiates are thought highly useful in this disease by Mr. V.; but he has generally found its value much enhanced by combination with an antimonial; as in this way it generally affected beneficially the skin and the bowels. After the disease, by these means, has been robbed of its inflammatory symptoms, astringents may then be administered, with a view of putting a stop to, or of lessening, the discharge. To effect this purpose, our author prefers the phosphate of iron; which, he says, "may be given as an astringent in doses of one or two grains, which may be gradually increased to a scruple or half a drachm, three or four times in the day. In children smaller doses should be given." "It may be observed, that after a continued use of any medicine, the dose must be gradually increased, or otherwise its effects will begin to diminish. Sometimes it is useful to suspend the use of the medicine for a short time, and then to recommence it again. In this way the susceptibility of the system is often revived, when it would not be safe to attempt the object by any other means."

This analysis of the present work is certainly very imperfect; and many interesting points, particularly relative to the pathology and treatment of the disease, are unavoidably excluded. For these, therefore, we refer to the work itself; which we hope to see republished by some of our enterprising booksellers; for though much of the doctrine it contains may easily be traced to other writers, particularly of the French modern school, we consider it, nevertheless, an interesting and valuable production.

Article XIII.—Report of the trial of an action, Charles Lowell vs. John Faxon and Micajah Hawks, for malpractice in the capacity of Physicians and Surgeons; at the Supreme Judicial Court of Maine, holden at Machias for the county of Washington, June term, 1824, before the Hon. Nathan Weston, &c. &c. Portland, 1825. 8vo. pp. 124.

A letter to the Hon. Isaac Parker, Chief Justice of the Supreme Court of the State of Massachusetts, containing Remarks on the Dislocation of the Hip Joint; occasioned by the Publication of a Trial which took place at Machias, in the State of Maine, June, 1824. By John C. Warren, M. D., Professor of Anatomy and Surgery in Harvard University, and Acting Surgeon in the Massachusetts General Hospital. Cambridge, 1826. 8vo. pp. 142.

We have purposely avoided noticing the former of these publications, until we could present the answer to the charges contained in it, against the learned and distinguished practitioner, so strongly and unnecessarily animadverted on by the defendant's council during the trial. We have not been disappointed in this answer: it is a cool dispassionate statement, and filled with excellent remarks on the injury which formed the basis of the prosecution. Before presenting an analysis of this transaction, we cannot abstain from noticing the illiberal spirit with which the defendants' attorney has endeavoured to invalidate the evidence of the author of the Letter, and that of his colleagues in the Massachusetts Hospital. That the arguments of the defence are ingenious and display much talent, must be allowed; and we are willing to admit that a lawyer is bound to make use of every honourable exertion to promote the success of a cause committed to him; but in this case he has overstepped those bounds which courtesy and a regard for the feelings of others prescribe to members of society. He is not content with heaping censure and contempt on the professional opinions of the witnesses: the institutions to which they are attached, nay, the very town in which they dwell, are involved in one wide sweeping denunciation.

We will endeavour to present, in as few words as possible, the history of the case, taken, in great measure, from the judge's charge.

It appears, that, on the seventh of November, 1821, the plaintiff, Charles Lowell, was riding a young and restive horse, which threw him and fell on him, his weight resting on the inside of Lowell's left thigh; in consequence of which his thigh was injured at the joint. Dr. Faxon, being near the spot, at Lubec, was immediately called: he had been the physician usually employed by the plaintiff's family; he attempted, and, as he thought, with success, to reduce the dislocation—the injury he said the patient had received; but not being confident of his skill, he acceded to the wish expressed by one of Lowell's friends, to send for Dr. Hawks, which was accordingly done. Dr. Hawks pronounced the injury to be a dislocation with fracture of the socket; and, finding the limb unreduced, proposed an operation, to which Dr. Faxon acceded. "In respect to the method of reduction employed on this occasion, there is nothing to show it was improper." "Dr. Hawks pronounced the bone to be reduced; Coffin (one of the bystanders) expressed the same opinion, and testifies plaintiff said it felt easy and natural." Other witnesses testify to the same point. "The knees were then bound together with a bandage, and the patient's situation explained to him by Dr. Hawks. The patient remained in this state fifteen days. In five or six days after the operation, Dr. Hawks was sent for, but did not come: on the fifteenth day he came and examined the patient, and explained that his other business had prevented his earlier attendance. On this visit, Lowell inquired the cause of the hollow upon the hip; which Dr.

Hawks said was owing to the fracture, and that it was as well as the nature of the case would admit. Lowell kept his bed three days after this. In about ten days, Dr. **Hawks** came again, and examined the limb very particularly. No difference in the length of the limb was observed at this visit. On the twenty-third of October, Dr. **Hawks** came the fourth time; the patient inquired of the Doctor the reason of the lengthening of the limb; the Doctor paused, and observed that it did not look as if it were perfectly in its place." "Soon after this period, some dissatisfaction appears to have arisen in the plaintiff's mind; and he was induced to go to Boston, and had the resolution to submit to have the experiment of reduction tried upon his limb at the Massachusetts General Hospital. An examination of his case was then made by Drs. J. C. **Warren**, **Townsend**, **Spooner**, **Welsh**, and **Mann**, with other physicians and surgeons; and it appears to have been the decided opinion of these gentlemen, that there was *then* a dislocation downward or backward, and four of the gentlemen said into the ischiatic notch. But it had existed so long that they would not undertake to reduce it without his consent; which he gave, and it was attempted, but unsuccessfully. Notwithstanding the failure of this experiment, however, those gentlemen persist in their original opinion; they further declare, that it was quite impossible that the bone should have been restored to its place, and have got out again, consistently with any of the circumstances suggested by the defendants. After recovering from the effects of the operation, the patient left the Hospital, and applied to two other surgeons: who concurred in the opinion of the dislocation existing, and by both of whom attempts were made to reduce the limb, but unsuccessfully. Not content with this, he applied to Dr. **Smith** in June, 1822; who "made a critical examination of the plaintiff's case." The result of Dr. **Smith**'s inspection was, that in his opinion there was no dislocation: according to his judgment, it was originally an injury done to the socket of the thigh bone, accompanied with a derangement of the bones of the pelvis.

Shortly after this, Mr. L. instituted a suit against Drs. **Faxon** and **Hawks**, for unskilfulness and negligence, by which the patient lost the use of the limb, &c.; laying the damages at 10,000 dollars.

On the trial, the jury were not able to agree, except in acquitting Dr. **Faxon**; they were discharged without taking further verdict; and finally the plaintiff suffered non-suit, and the defendant agreed to take no costs.

Such, we believe, are the striking features of the case, as detailed in the pamphlets before us; exhibiting as extraordinary a collision of opinion and opposition of authority as any on record. As the action rested not less upon the charge of negligence than want of skill, this must be taken into account, as having a stronger bearing on the case than at first view would be supposed.

Dr. **Warren**, in his letter, still maintains the opinion he gave at the time of the trial, and endeavours to substantiate it by reference to the anatomy of the parts, and the best authorities on the subject; he very properly declines speaking of the ability or criminality of the defendant, and confines himself to charges made against himself. In this we think he has been successful. Without wishing to enter into the controversy, and disclaiming all feelings of prejudice as regards any of the parties, we may be permitted a few remarks on the medical evidence adduced on both sides. Here, as in almost every trial of which we have seen the record, nothing is more glaring than the incongruity of the medical evidence: we find some eminent practitioners declaring that a dislocation of the thigh exists, whilst others insist that such an injury had never been sustained by the patient. Of these latter, thus giving their evidence in direct opposition, only one who ever actually examined the patient, declared, that in his opinion, no dislocation existed, but that the injury arose from affection of the muscles, or *some other cause;* whilst we find another witness declaring that probably not one medical man in ten would be able to reduce a dislocation of the hip; and yet such evidence as this was not only admitted, but considered as of sufficient importance to influence a jury.

In this case, both the court and jury appear to have lost sight of a principle of evidence which cannot be too strongly inculcated, particularly in points of legal medicine, that the opinion of one man of acknowledged celebrity and skill, should outweigh a mass of negative testimony delivered by those who are known to be inferior in knowledge and standing.

The presiding judge on this trial, has laid down, in his charge, some excellent opinions, regarding the legal obligations which physicians and surgeons are under, when called to render professional assistance.

"Whoever undertakes to practise physic or surgery, holds out to the public that he possesses a competent degree of medical skill. The measure of skill required is ordinary skill, according to the general state of medical science in the section of country in which he lives. The degree of professional talent which may be expected, will depend much upon the patronage and encouragement by which it may be fostered and elicited. In large and opulent towns and cities, where physicians and surgeons find extensive employment and ample compensation, competition is invited; and the candidates for public favour in these arts are stimulated by the most powerful motives, in their endeavours to attain professional eminence, and are at the same time aided by many facilities not to be found in more secluded and less favoured situations. The highest degree of skill, therefore, is not to be expected in small towns; where there is little competition and fewer motives for exertion, from the comparative want of patronage, and the limited opportunities afforded for professional improvement. Circumstances of this kind are well entitled to engage the consideration of a jury."

ARTICLE XIV.—*An Analysis of Fever.* By CHARLES CALDWELL, M. D., *Professor of the Institutes of Medicine and Clinical Practice in Transylvania University.* Lexington, Ky. 1825. Noticed in our last.

"There are two modes," says a celebrated correspondent, "of improving human knowledge; the one by the exercise of the *knowing*, the other by that of the *reflecting* faculties." Of these, Dr. CALDWELL has selected the reflecting path: he has not aimed the essay before us, at increasing or revising the *facts* upon which our medical doctrines are based, but at reasoning and drawing deductions from them. We are matter-of-fact men; and, in general, attach more value to the increase of our knowledge gained by observation, than to that obtained by reasoning upon the observations of others. Our main ground for this preference is, that we apprehend the domain of medicine to be, at the present moment, undergoing more extension by the former means than by the latter. We are not prepared, indeed, in any degree to place a light value on reasoning in medicine; but believe, with our venerated RUSH, and, in fact, with nearly every medical philosopher, ancient or modern, that they should go hand in hand. Ever since the time of BACON, however, philosophers have been of the opinion, that all *chains* of reasoning, on subjects of natural science, were to be viewed with mistrust, and that nothing should be counted upon with confidence, but brief and direct inferences from fact. To this we think every physician should be competent; and this circumstance greatly diminishes the value of works professing to consist of arguments exclusively. Besides, as the process of reasoning, to a talented mind, is one of more facility than that of patient and laborious observation, and especially as it flatters self-esteem by a perpetual appeal to, and exclusive reliance on, the proudest and almost the noblest faculty of man, it is of itself apt to run into excess; and the youthful physician is extremely prone, as history has uniformly demonstrated, to satisfy himself with an ample proficiency in the opinions of his teacher, or with the dictates of his own natural powers, to the neglect of the painful and emmet-like accumulation of particular observations. It is in these individual truths, after all, that our science really consists; and it is the true object of theory merely to classify them.

Fever, according to Dr. C., is "a compound disease, made up of morbid affections of all the various sub-systems or tissues belonging to the body. It is, therefore, not literally, but in a higher degree than any other complaint," a *general* disease. It originates in a primary local derangement; *inflammatory*, *congestive*, or *merely irritative;* and is spread by sympathy to the other organs. It generally, and in the most formidable cases, commences in the mucous membrane of the alimentary canal; but may arise from various other sources, particularly from the serous membranes. It can never be completely formed, unless the resistance of the stomach be overcome; but in what way this takes place, whether he means it must undergo phlogosis, the author does not inform us. *Internal congestion* and a *centripetal action* are necessary to the existence of fever; and the removal of these is a leading indication of the cure. Dr. C. thinks that fevers must always go through their five successive stages, of local morbid impression, access, rigor, excitement, and augmentation of the secretions: and he believes that, when these are not perceptible to ordinary observation, this takes place because they pass with a rapidity which prevents their due appreciation.

On the subject of absorption, alluded to in speaking of the nature of the local impression which produces fevers, Dr. CALDWELL is known to entertain opinions at issue with the whole body of modern experimentalists.

ARTICLE XV.—*Medical and Physical Memoirs.* By CHARLES CALDWELL, M. D., *Professor of the Institutes of Medicine and Clinical Practice, in Transylvania University.* Lexington, 1826. Noticed in our last.

We have nothing to add to our notice of the article on alleged medical irreligion, except that we did not mean to impute to Dr. CALDWELL any *preference* for natural over revealed religion; which we understand he particularly disavows.

A Dissertation in answer to certain Prize Questions, proposed by his Grace the Duke of Holstein Oldenberg, respecting the "Origin, contagion and general philosophy of Yellow Fever, and the practicability of that disease prevailing in high northern latitudes;" with thoughts on its prevention and treatment.— To go into the great yellow fever question, and endeavour to settle that which has exhausted so many quills, and which has been so often thought to have received its quietus, is a task for which we feel by no means prepared. It is therefore entirely out of our present plans to give any extended analysis of this pamphlet. Its perusal has confirmed us in the opinion that we expressed of it at the close of our last number. We regret that the author did not, as he informs us it was his original intention to do, actually present it to the Berlin Medical Society for adjudication. We say this, both on account of the necessity of furnishing the Europeans more extensively with the great mass of American knowledge and experience on this point, and, in some measure, for the sake of an effect which we apprehend it would have had on the essay itself. Had the author presented it as alluded to, he would probably have thought it necessary to give his facts and references in more detail; and this would form an addition of no slight importance to its usefulness. We are sure that the principal value of his present essay is derived from the undoubted and extremely important facts which it contains; and that it would be incalculably augmented, if their circumstances were more fully recorded and referred to.

With several points on which we should not agree with the eminent author, we apprehend it to be a masterly, though somewhat hasty, review of the *American* doctrines and opinions on this most important subject; and now, that our government is placed in communication with that of France, relative to momentary measures, based on the settlement of these questions, apprehend that Dr. CALDWELL's pamphlet is calculated to be of public service.

Thoughts on the Analogies of Disease.—This is a sketch, in forty-six pages, of several of the leading points of comparison and similarity general among most or all diseases. We think it certainly worthy of an attentive perusal; but it should form a part of an extended course of study, embracing the acquisition of a large amount of facts; after which these principles of generalization will become very useful. That distinction should be constantly borne in mind, which exists between the real acquisition of knowledge, and the mere act of reflecting upon and methodising it. Our author here expands the views he had given in a preceding essay: he tells us, p. 180, that those are *philosophers* and men of a higher order of intellect, who abound in principles, while their store of facts is comparatively limited; and, p. 184, that, from the labours of such as these, "three years' study of medicine now, is equal to four if not five, even as late as about the close of the last century." We apprehend this to be a dangerous error, particularly flattering to the indolent student; that medical minds are to be valued, not in proportion to the number of their principles and the facility with which they are formed, but to their accuracy and the care with which they are based upon, and compared with, the largest accessible amount of facts; that the real use of theories is to *classify* facts, and not to supersede them; and that, finally, the science of medicine is now so widely extended, that the student, however far he may have the advantage of his predecessors, in facilities for acquiring his profession, does not do justice to its present improved condition, without a longer course of study than that generally demanded in this country.

QUARTERLY SUMMARY

OF IMPROVEMENTS IN MEDICINE AND SURGERY.

ANATOMY.

1. *Description of a Deformed Fœtus.* By Benjamin Ellis, M. D.—The deformed fœtus, of the head of which the accompanying plate represents different views, was born in Feb. 1825. No dissection was made of the body; but apparently every other part is perfectly developed.

It is a female child. The mother was a small woman, of very delicate habit, and has since been declining with consumption. The only circumstance that appeared to be peculiar in the labour, was the large quantity of the liquor amnii. The membranes were ruptured before I arrived; but the first information I received from the attendants was, that "a very large quantity of water had come away." I believe the woman was seated on a chair at the time, and the liquor amnii flowed on the floor.

Dr. Shoemaker informed me, that in a case which once occurred in his practice, a similar peculiarity followed the rupture of the membranes.

It will be seen by the plate that the upper portions of the bones forming the arch of the scull are deficient. The contained substance appears to be imperfect brain; and the small body represented in the plate as attached by a pedicle is of the same nature.

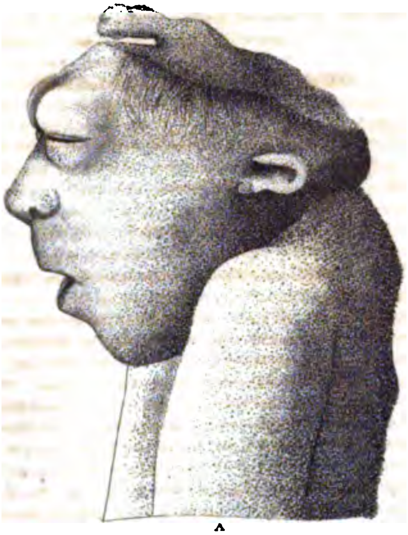
At one period of the labour, the head remained stationary for some time, and I began to fear there would be a necessity for instruments. This difficulty appeared to be owing to the irregular surface which the imperfect scull presented. I sent at this time for Dr. Bond. Shortly after his arrival, the head began to descend, and the child was soon delivered naturally.

A small quantity of blood flowed from the cord. The heart pulsated for several minutes distinctly, when it ceased, and no other evidence of life appeared.

It was observed that every other part except the head appeared to be perfectly developed: the neck, however, is so very short, that it certainly merits the appellation of deformed. The approximation of the shoulders, and the narrowness of the chest, as represented in the plate, may perhaps be partly attributed to the pressure they sustained from having been at first placed in too small a vessel.

Under the article Anencéphalie, in the Dictionnaire de Médecine, we find a description of similar cases. *Anencéphale* is applied by the writer, M. Breschet, to those fœtuses whose crania are only partially deficient. *Acéphale* is used by him to denote children, *headless*. As the first of these terms does not, however, exactly define the degree of deformity, or rather signifies a *total absence* of brain, the writer proposes the term *hémicéphale*, as expressive of a *partial* deficiency of the brain and its osseous envelope.

Without coining a new name, we shall content ourselves with the foregoing statement.



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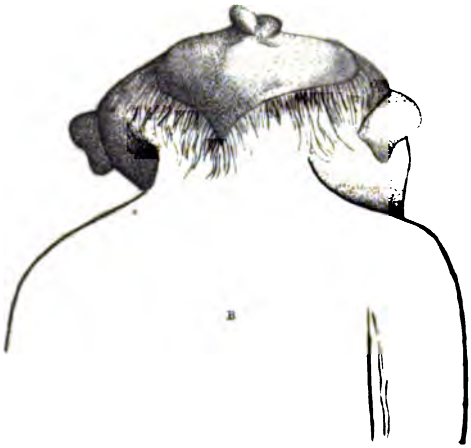

Drawn by S. G. Morton M.D.   Engraved by C. D. Meigs M.D.

Children possessing a partial brain, as is the fact in the present case, frequently live after their exit from the uterus. The French work alluded to records several instances where life continued, for a longer or shorter period of time, from an hour to a week. By some writers it is stated, that the number of female children born with this deformity exceeds that of males. In the case described in this paper, as was mentioned, the fœtus was a female. It is stated that the manifestations of the fœtus in utero are always perfectly natural, though the delivery generally takes place before the full period of pregnancy. Whether the female who was the mother of the fœtus in my possession, had arrived at the ordinary period, I am unable to state positively; although such was always my impression.

Various conjectures have been indulged by different physiologists, as to the cause of these mal-formations. By some they have been attributed to the maternal imagination; or to physical causes acting either externally, as blows, falls, &c., or internally, as fluid in the brain, &c.

As these monsters are frequently found in cases of plurality, the presence of so great a mass has been urged as a cause of the imperfect development of one of the children. These observations we have taken from the French Dictionary before mentioned. The essays upon this subject are long, and will be interesting to any one who is curious to inquire into the history of these irregular movements of nature.

2. *Connection of the Sympathetic Nerve with the Seventh Pair.*—This nerve, says Dr. Frederick Arnold, in his inaugural dissertation, is united with that of the seventh pair, by one or more twigs, coming from a gangliform plexus in the canal of Fallopius, formed by the superficial branch of the vidian nerve, with a twig from the carotid plexus.

At the spot where the branch of the vidian nerve unites with the facial, (portio dura,) there is a ganglion, from which issues, 1. a thread which unites the facial with the auditory, (portio mollis,) and, 2. the chorda tympani; which last, of consequence, is neither formed exclusively by the facial nor by the vidian nerve.—*Bulletin.*

3. *The Serosity of the Spinal Canal,* according to M. Magendie, is not contained in the proper cavity of the spinal arachnoidea; but between the inner fold of that membrane, and the medulla spinalis itself. This observation is confirmed by Dr. Desmoulins, in his late work, on the "Anatomie des Systèmes nerveux des animaux à vertèbres."—*Ibid.*

4. *Laws of Formation of the Different Lobes of the Brain of Animals.*—Our readers will recollect the mention we have already made of the recent researches of M. Serres and others, on the formation of those numerous and intricate lobular bodies which seem to replace the brain in the lower vertebral animals, particularly in fishes. Dr. Desmoulins concludes, from researches of his own, that, excepting the lobes which form the real cerebrum, and those others within the cranium into which no nerves are inserted, all the other cephalic lobes are formed, and, after they are formed, further developed, in exact proportion to the size of the nerves to which they belong; so that these lobes appear to depend entirely upon the nerves to which they are attached. These are [principally] the nerves of the senses; (our readers may recollect the nerves and lobes of *respiration* in fishes, as described by M. Flourens. Vide Vol. I. of this Journal, pp. 453, 4.) Hence, from the great variety in the number and development of these nerves, he explains the great diversity in these sensorial bodies. The number of them may vary from three to eight lobes and pairs of lobes.

Dr. D. confirms the opinion of Dr. Serres, that the different parts of the nervous system cannot, with propriety, be said to be formed, the one out of the other, but that each is produced separately, and the necessary junctions subsequently made.—*Bulletin.*

5. *Real Hermaphrodism; in a Long-Armed Ape.*—Cases of real hermaphrodism, in man or the other vertebral animals, are so rare, that many physicians have doubted their existence. Every body knows that real hermaphrodites and androgynæ occur among the molluscous animals; some shell-fish being capable of procreating within themselves separately, while others require mutual intercourse, either by pairs, or in a chain of successive individuals, each fecundating, and being fecundated, at the same time. In animals more nearly approaching to our own species, however, the individuals which have been taken for such have eventually, in almost every instance, been ascertained to be deformed males or females, principally the latter.

In the "Bulletin de la Faculté de Médecine," for 1811, p. 176, the celebrated Mascagni describes a bull, with all the male organs, and with ovaries, uterus, and vagina; but, in place of a vulva, the vagina had its origin in the urethra. In the Medical Repository, (?) No. 45, a human individual is described, who united both sexes in apparently great perfection. The subject was 21 years of age, was twice pregnant, and underwent abortion at the 3d and 5th months. The testicles and their excretory ducts were not examined anatomically. These instances are taken from the Dictionnaire des Sciences Médicales.

Dr. Harlan, whose citations we have just been using, has described one in an ape, which he considers a new species, and for which he proposes the name of *Simia concolor*. It is one of that sub-genus known by the name of *Gibbon*, or *Long-armed Ape;* and which has been associated by M. Cuvier, with the Orang-Outangs. The animal was obtained from Borneo; and recently died, in this city, of a very compound affection, including dysentery, diseased mesenteric glands, tubercles of the peritoneum, and gastritis.

The penis was about an inch in length, and subject to erections: it terminated, as usual, in a glans, but was imperforate: a deep groove ran along the inferior surface, serving as a rudimental urethra. The lower third part of this groove was, however, closed by a thin diaphanous membrane; which also extended across the vulva, and completely shut the vagina. The meatus urinarius opened into the vagina, beneath the pubis; so that the urine, when discharged, must have filled the vagina, and then been forced along the groove of the penis by the confining membrane. The vagina was rather large, and presented transverse striæ; and traces of the nymphæ and labia externa were visible. The uterus appeared perfect, with all its appendages, including well-pronounced ovaries, in situ, with minute ova visible in them. The scrotum was divided, consisting of a sac on each side of the labia externa, at the base of the penis, and was covered with hair. The testicles lay beneath the skin of the groin, about two inches from the symphysis pubis, obliquely outwards and upwards: they appeared to be perfectly formed, with the epididymis, &c. The most accurate examination could not discover vesiculæ seminales; but "an opening" into the vagina, above the meatus urinarius, appeared to be the orifice of the vas deferens.

Dr. H. asks, whether the animal, if it had reached mature age, (it was about two years old,) could have been impregnated by the male, after rupturing the membrane which closed the vulva; or whether, as the vasa deferentia terminated within the vagina, the creature could have impregnated itself by masturbation; to which this tribe of beings are so much addicted.—*Journ. Philad. Acad. Nat. Sci. vol. 5.*

II. PHYSIOLOGY.

6. *Suction of the thorax exerted on the venous blood.*—Dr. BARRY, in his recent "Experimental Researches on Atmospheric Pressure," has published several experiments on this subject. Tubes were introduced, by mechanism which we have not space to describe, into the pleural and pericardial cavities of several animals; while the outer ends of them were secured to spiral glass tubes, immersed, at their extremities, in coloured water.

In every instance, during *inspiration*, the coloured liquor ascended the spiral glass tubes with great celerity; and during *expiration*, it either remained at rest, or slightly regurgitated. We know not whether it be an exception to this remark to say, that in a tube introduced into the pericardium of a horse, there was an "oscillation" of the fluid upwards during expiration. These experiments were repeated and varied in several ways, and with the same results. When a dog was forced to make peculiarly violent efforts to inspire, by obstructing the trachea, the liquids ascended with greatly augmented rapidity.

When the tubes were introduced into the jugular vein, directed towards the heart, and the vein was tied over them, similar effects were produced.

Having thus demonstrated, that the thorax, during inspiration, exerts a power of suction upon the fluids in the vessels which enter it, (a truth which we confess we considered sufficiently proved from the structure of the thorax, and from its well known motions,) Dr. BARRY infers, 1. That the blood which runs contrary to its own gravity, arrives at the heart only during inspiration; and, 2. That the power which thus impels it through the veins is atmospheric pressure. From these he draws several inferences, which we have not sufficient space to copy; but the main object of which is to show, that there must be an accumulation of blood in the venous branches, from the current constantly conveyed into them by the arteries, during expiration; and that the velocity with which the blood returns to the heart is to be estimated, not by the activity of that organ, but by the frequency of respiration.

We apprehend that the principal error existing here consists in the supposition, that, because the blood is proved, during inspiration, to be drawn towards the heart, it follows that this is the *only* power which conveys it there, and these the only moments at which that motion takes place. The thorax, in its state of greatest contraction, is known to *hold the lungs distended*, by removing the atmospheric pressure from their surface; and if this smaller degree of suction co-exist with a protrusion of the blood by a *vis a tergo*, in a nearly equal degree, the effects described by Dr. BARRY will take place, and a fluid, placed in communication with the great veins, will remain stationary, neither passing inwards nor outwards: while, at the same time, the blood is actually moving onwards towards the heart. Were this not the case, the heart would be entirely *deprived of its supply of blood* during expiration; and when this is continued for a space exceeding two or three beats, (an experiment easily tried,) the pulse would be arrested, for want of blood to distend the arteries. So inconsequent do these inferences of Dr. BARRY appear to us.—*Medico-Chirurg. Review.*

7. *Absorption.*—Dr. BARRY concludes, in the work just alluded to, that absorption is conducted by the process of suction just described; that not only do the absorbed fluids, near the heart, pass to that organ in the manner spoken of, but that substances enter their orifices by the same mechanism. And hence he explains the success of cupping-glasses applied to poisoned

wounds. Suction through such long and flexible tubes as the lymphatics, we do not think likely to find many permanent believers.

Dr. **Barry's** experiments on the application of cupping-glasses to poisoned wounds, noticed in our number for April last, p. 447, have been repeated before many witnesses, both in England and France. M. **Laennec**, the author of the report there mentioned, speaks of them in the most respectful terms.—*Ibid.*

8. *Phrenology.*—This doctrine has made important and highly creditable converts in England. The Quarterly Phrenological Journal still continues to be regularly published, and appears to be extending its circulation. It is principally filled with exemplifications of various characters from history and fiction, according to the new principles, with essays on the abstract nature of individual faculties, narratives of interesting and curious cases, applications of phrenology to the occurrences of the times, defences of it against the reiterated attacks made upon it, &c. It forms an amusing miscellany, dull, in many parts, to the general reader, but containing, perhaps, quite as large a portion of articles interesting to any individual as the generality of good magazines. Societies are established in several of the towns of the British empire. Dr. **Elliotson**, the translator of Blumenbach, is president of the London association. Dr. **Otto**, a learned physician of Copenhagen, has founded a society there, and published a systematic treatise on the science. Dr. **James Johnson**, the celebrated editor of the Medico-Chirurgical Review, and author of the work on the Influence of Tropical Climates, has taken a bold and decided stand, as a defender of the modern doctrine. The accession of a journal of so high a character, for it has been often spoken of as the first medical periodical in England, must be a triumph and advantage of no mean importance to the cause of phrenology. In the number for last October, just received, there is an elaborate review of the *second edition* of Mr. **Combe's** new "System of Phrenology," and of Dr. **Spurzheim's** new work, entitled "Phrenology, in connexion with the study of Physiognomy." Dr. S. is said to be engaged in preparing a work, in which he intends to vindicate those parts of the doctrine and of the anatomical discoveries, which he considers as peculiarly belonging to himself, distinguished from Dr. **Gall**. This task may interest the public less than the author; but it is an act of justice to his own fame to which that celebrated writer is unquestionably entitled.—*Phrenological Journ.—Med. Chir. Review.*

9. *Mode of termination of the nervous fibres.*—Dr. **Rudolphi**, of Berlin, in his new Elements of Physiology, and Messrs. **Prevost** and **Dumas**, of Paris, have stated that the extremities of the nervous fibrils are not actually continued into the substance of the muscles, vessels, or glands; nor do they present a loose termination, but return into themselves, forming loops, which interlace with the muscular fibres, and form a network round them. —*Bulletin. July.*

10. *Fibres of the Veins.*—Dr. **Rudolphi** confirms the description given by **Bichat**, of the entire absence of visible transverse fibres in the coats of the veins, and of the extreme delicacy of the longitudinal ones, which can hardly be put in comparison with the strong, elastic-contractile tunic of the arteries.—*Ibid.*

III. PATHOLOGY.

11. *Vaccination of Animals.*—This operation was practised by M. Gohier, on the hog, cat, rabbit, and domestic fowl. The experiments of Dr. Jenner on the grease of horses, are in the memory of many of our readers; and a Dr. Sacco had also published some experiments of a similar kind. Dr. Numan, professor in the Veterinary School of Utrecht, has applied the vaccine to a number of animals, with the view of studying the results thereby produced; and publishes his observations in a pamphlet.

The vaccine has been repeatedly observed in Holland among persons employed in attending to cows.

In *cows*, three or four insertions were made by our author, in each teat, with matter obtained, either directly from other cows, or from children who had undergone the artificial process. The punctures inflamed; and in three or four days afterwards, the vesicles began to extend, until they had reached their acme; which took place on the eighth or ninth day, yielding unquestionable vaccine matter, possessed of the power of transmitting the disease to the human subject. The vesicles often extended four or five twelfths of an inch in the direction of the length of the wound; (un développement de 4 ou 5 lignes dans le sens de la plaie;) but were frequently smaller. The scab separated on the eighteenth to the twentieth day. In many cows there was no areola; in others a very visible one. This irregularity was, in part, ascribed to the dark colour of many of the teats; which disguised and perhaps often entirely concealed the redness of the inflammation. No eruption was observed either in the vicinity of the punctures, or more remotely. A slight heat was observed in the ears and horns; and some acceleration took place in the circulation. The appetite and rumination were not changed.

The Bull.—Mundigh and Hosacker deny the possibility of communicating the vaccine to the bull; while Bergman asserts its practicability. Viborg communicated it to a buffalo; and Dr. Sacco to young bulls, but could not do the same to old ones. Dr. Numan succeeded in producing a very regular vaccine in the scrotum of a bull, and in communicating the disease from this animal to cows, though he failed in a young child.

The Horse.—It is found by experience, that the vaccine will originate in cows that feed in pastures where there are no horses; so that the opinion which ascribes the origin of this disease to the affection of horses termed "*grease,*" must be erroneous. Nevertheless, Viborg found that he could produce vesicles, (boutons,) in the teat of the cow, by inoculation with the matter of "*grease,*" (called *mok* in Holland,) not only in the original place of insertion, but around it. Similar trials made in the metatarsus of horses, with the vaccine matter, produced vesicles of a kind closely resembling the ordinary vaccine. Horses never took this affection more than once: and they underwent no perceptible disturbance of their general health.

The Ass.—These animals are subject to the "*grease;*" but inoculation with the matter thus produced, has never effected a real vaccine in cows. When vaccinated themselves, they are affected with more facility than horses, probably owing to the comparative thinness of their skin; and the pus (lymph? the French frequently do not distinguish clearly between *pustules* and *vesicles*) when inserted in the teats of cows, produced more abundant pustules than their own vaccine. The matter of these, again, communicated an analogous disease to horses, and to other cows.

The *vaccino-equine* and *vaccino-asinine* matters did not affect man with so much certainty as the ordinary vaccine matter; and frequently failed altogether. One crust, however, of *vaccino-equine* matter, but taken from a horse affected with grease, produced a real vaccine which was propagated to a great number of infants.

A *camel* was inoculated with vaccino-equine, and with real vaccine from a child. Both took; the former with some difficulty. On inserting the matter of these into a cow, the former took; and the vesicles formed, served again to produce others in a goat.

In the *goat*, the matter from the camel produced vesicles in the belly, and a few upon the right teat. That from a female ass communicated them to the belly but not to the teat. Some of these, of which species we are not told, communicated vaccine vesicles to a child, at the second inoculation, two insertions being made each time.

Vaccination succeeds in the *sheep;* but it does not preserve them from the rot: this effect may be produced by inoculation with the matter of the rot. They take vaccination with more difficulty than goats. Cows and the human species have never taken the vaccine by inoculation from sheep, though repeated attempts have been made.

Hogs will take vaccination, but not communicate it to our species.

A *baboon*, Papio Nemestrinus, Cuvier, took vaccination; but the vesicles began to diminish on the seventh day. Two insertions of the matter being made in a child, one of them presented a beautiful vaccine.

The reader is referred to Mr. Travers's observations on the inoculation of the human subject with glanders, at pages 97 and 98, of this number. —*Bulletin.*

12. *Small Pox and Varioloid in Milan.*—Dr. Stefano Moro has published an account of an epidemic of this nature in that city; which we shall not analyse, as our patience and that of our readers is by this time exhausted with listening to the echoes of the same narrative which are rolling " round and around" the world. Dr. Moro's results confirm, in the most ample manner, those of the Scotch observers, and of our own countrymen; and in particular, set in, if possible, a still higher light than ever, the preservative powers of the vaccine, tried in one of the most tremendous visitations perhaps ever known., Of those who were exposed, and who had never been vaccinated, but a small minority escaped the disease; and of those who, thus unprotected, were attacked by the epidemic, *one out of four died.*—*Ibid.*

13. *Small Pox in Paris.*—Messrs. Brunet, Doussain-Dubreuil, and Charmont, have published, under the auspices of the government, a list, *by name*, of all those who died of the small-pox, during the late visitation of that city; together with notes of all the information they were able to collect, relative to the cases, by calling at the houses. We insert this to show the pains that are taken on such points in some parts of the world.—*Ibid.*

14. *Exanthematous Ophthalmia.*—Described by Mr. Wardrop, in the Edinburgh Medico-Chirurgical Transactions. Characterized by being always accompanied or preceded by some eruptive disease; most commonly by eruptions of the scalp, and those behind the ears of children: these alternate with the affection of the eye. The ophthalmia may follow measles, scarlatina, and the other exanthemata; but usually after a considerable interval of time, and not till some secondary eruption has occurred about the head. The most striking symptom is an excessive intolerance of light: the child cannot hold up his head without difficulty, and if he open his eyes, is dazzled, as if he were looking at the fire, and sheds tears profusely. He generally remains with his face buried in a pillow, or with a handkerchief pressed closely against his eyes. In the *afternoon* there is sometimes a remission sufficient for the patient to see a little. The tears become acrid and irritating, occasioning violent sneezing and scalding of the cheeks, alæ nasi, and

lips, producing inflammation in them, and covering them with pustules and superficial ulcerations. The eyelids are often swelled and marked with superficial veins. Extreme difficulty is experienced in getting a view of any portion of the ball of the eye; it is not without severe pain that the cornea can be exposed, and frequently it is impossible to do it. The redness is not remarkably vivid, and appears composed of a few distinct trunks. In general, one eye is more violently affected than the other, though most commonly both partake.

Constitutional disturbance is generally marked by frequent pulse, white tongue, disordered primæ viæ, tumid abdomen, sallow skin, and emaciation. The disease sometimes continues in its aggravated form for many days and weeks; and in some instances, for months, and even years. The injury sustained by the organ is slight, for such a severe and long continued disease: it consists exclusively of specks, and sometimes ulcerations on the cornea. There is no morbid secretion from the meibomian glands.

The treatment will be noticed under our article "*Therapeutics.*"—*Med. Chir. Review.*

15. *Diphtheritis. Membranous inflammation of angina maligna and croup.*—Dr. BRETONNEAU, of Tours, the discoverer and original describer of the disease noticed in a former number under the name of Dothinenteria, has made a series of observations, which go to prove an identity between angina maligna and croup. A very destructive epidemic broke out at Tours, in which children appeared to die of croup, and adults of the malignant angina. On examining the throats of those who had died with symptoms of the latter disease, including the grayish mottled appearance and fœtid smell which have been generally considered as indicating gangrene, he found, to his great surprise, *that the mucous membrane was uninjured,* and that what he had taken, in common with perhaps all the physicians of the world, for gangrenous portions of the living tissue, were only *membraniform exudations.* Further examinations satisfied him that the real cases of croup began, and almost universally do begin, in the tonsils or pharynx; where they are *within the reach of remedies capable of arresting the disease!*

Dr. BRETONNEAU considers this species of inflammation as identical with an affection which has been known by the name of *scorbutic gangrene of the gums.* Our readers will recollect a paper on the gangrenous ulcer of the mouth, as observed at the Children's Asylum, by one of the editors of this work, inserted at the commencement of our second volume. In that paper, a comparison of some extent is made, among the various descriptions given by authors, which have been referred by some to such a scorbutic affection. Whatever may be thought of the descriptions given by other authors, the gangrene of the Children's Asylum can certainly not be deceptive, nor consist merely in a pellicular exudation; as it penetrates to a considerable depth, separates in the usual manner, leaving a cavity, and often produces necrosis of the bone.—Twenty-two dissections were made, for the sole purpose of ascertaining whether the apparent sloughs of the pharynx, in the cases of angina, were really so, or whether they were merely an inorganic effusion of coagulated lymph. The result we have already noticed. Even where the fœtor which existed seemed to almost every one indicative of gangrene, it appears to have been owing to the putrescency of this membranous matter.

The direct evidence on which our investigating author decides that the croup begins in the tonsils or pharynx, is not given in the papers which are lying before us; we are only informed of the fact, upon the authority of Dr. B.'s observations. "In fifty-five subjects, however, of all ages, who fell victims to the epidemic angina, there appeared but one instance in which the false membrane was confined to the trachea, without any similar exudation in the tonsils or some part of the pharynx. In no case, even of the most malignant nature, was there any thing like gangrene of the parts. Ecchymoses of small extent, and occasionally a slight erosion of those surfaces where the disease had continued longest, were the worst alterations of structure which were met with. In about one case in nine, the concretion extended to the ultimate ramifications of the bronchia; in about one-third of the cases, to the great divisions of the bronchia; and in all the rest, it terminated at various depths within the trachea; the immediate cause of death, in all instances, appearing to be the mechanical obstruction of respiration."

It is sometimes difficult to detect the appearance which precedes the formation of the membrane. It consists, most generally, in irregularly shaped patches of dotted redness, without swelling. There is a very fine vascular injection, with minute ecchymoses, and white interstitial spots, which are the orifices of the mucous follicles. These are best seen with a magnifier. One or more long, narrow, red streaks are often seen running down the pharynx or trachea. On the middle of each of these striæ, a stripe of concrete matter is formed, frequently containing minute bullæ. The edges of the concretion are gradually lost in the neighbouring mucus; and this, though not changed in its appearance, is coagulated, and has lost its viscidity. The union of these bands forms the tube; which is fastened to the membrane by little processes extending into the mucous follicles. If the membrane be detached, the redness increases, a fresh deposition is formed, and the adhesion becomes more close. The diagnosis of *angina diphtheritica* is generally as follows. "Redness and tumefaction of one of the tonsils, seldom of the whole of both; erratic fever, not much developed; then some white spots on the surface of the affected tonsil, produced by the pellicular exudation, and easily detached; enlargement of the lymphatic glands on the sides of the neck; deglutition not very difficult, afterwards still less so; a redness surrounding the concretion, and spreading, sometimes very rapidly, to the velum palati, uvula, pharynx, and opposite tonsil. Most frequently, after this sudden expansion, the progress of the diphtheritic inflammation becomes suspended for a time. The intumescence of the lymphatic glands either subsides or remains stationary, and the fever is scarcely perceptible; but after some days, or, perhaps, only some hours, cough begins, either dry or accompanied by some frothy expectoration, and, soon after, producing a sound resembling barking."

This disease must be distinguished from common cynanche tonsillaris, syphilitic sore throat, scarlatina anginosa, bastard or spasmodic croup, and trachitis. We have not space for the comparison. Suffice it to say, that Dr. B. is of the opinion (the opinion, it is to be recollected, not of a fanciful theorist, but of a dissector) that the false croup, which may disappear in a few hours without any treatment, (angina stridula,) is not spasmodic, but owing to an œdema of the mucous membrane of the larynx; and that he acknowledges a regular inflammation of the trachea and larynx, presenting the ordinary characters of inflammation, and designated, according to the custom of a great number of physicians, by the name of trachitis.

For the simple and decisive *treatment* of diphtheritis, vide article "Therapeutics."—*Med. Chir. Review.*

16. *Mr. King's cases of disease ascribed to spurred rye.*—Our abstract of Mr. King's paper* has attracted the notice of the editors of Anderson's

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* Originally published in our respected cotemporary, the New York Medical and Physical Journal.

(London) Quarterly Journal; who have done us the honour to extract it, without, at the same time, mentioning the source from which it was derived. From Anderson's it has been copied or noticed in several of the English journals. A correspondent of the last named work notices a very great resemblance between the disease described by Mr. King, and the *scorbutic* form of the singular endemic recorded by Dr. Latham, as occurring in the General Penitentiary at Milbank. . We must confess that the London writer has made a strong parallel; and when he asks on what ground Mr. K.'s cases were referred to the use of spurred rye, we are bound to say, as the authors of the note alluded to, that we do think, on reflection, the evidence defective. We believe it was solely on the ground that the prison was supplied with rye bread, and that ergot was very prevalent at the time among the crops of that grain.

With regard to our inquiry whether the American and English ergot were the same species, (a point certainly of some importance,) we have only to remark that the ergot is now used very extensively throughout the United States, for the purpose of accelerating labours; that we ourselves have seen repeated instances of this practice, as well as trials made with it in amenorrhœa; and, in particular, that we once attended a whole family affected with symptoms of poisoning, (viz. gastro-enteric pain, vomiting and purging, and, in an adult female, pains recurring at short intervals in the small of the back,) from ergot, and that in no instance have we seen or heard of a single case of gangrene or visible tendency to gangrene from its use!! We concluded, both from this circumstance and from the discordant opinions expressed in Europe of its action on the uterine fibres, that there was certainly some mistake in the subject. Some botanist, acquainted with fungi, might, perhaps, ascertain the point.

The writer in the London Journal asks for information on this point from some of its American correspondents; and, as we presume the editors consider us as such, these remarks are at their service.

17. *Case of the expulsion of a pin, after having remained in the bowels for a number of years.*—Dr. Crockett, of Lexington, Ky. has communicated to us the following case. Miss N. B., when a child, swallowed a brass pin, about one and a quarter inches long, which produced an occasional feeling of soreness, low in the left hypochondrium. In the month of August, 1823, this female, being eighteen years old, passed the pin during the operation of a drastic purgative, taken while labouring under an attack of bilious fever. Its head and nearly half its shaft were found enveloped in a spherical crust of calcareous matter. Since the expulsion of the pin, the soreness in the side has disappeared.

PRACTICE OF MEDICINE, THERAPEUTICS, AND MATERIA MEDICA.

18. *Vaccination.*—Dr. H. Gregory, Physician to the Small Pox and Vaccination Hospitals in London, publishes some observations on the practice of vaccination. In this paper, Dr. Gregory urges among the causes of failure, the use of dry lymph, dull points, and glasses; especially the former. But Dr. Gregory has never had any experience with the former. He remarks also, "I have ascertained by frequent experiments that lancets, well charged, and kept perfectly cool, will *retain the virus unaltered even in summer for about six hours.*"

Now we earnestly wish, that no diminution of carefulness or fidelity should take place in relation to this most important and precious deposit of bountiful providence; but we could not but be struck with the idea that the virus may last unaltered for six hours. As far as our experience goes, the dry scab is universally used in the United States. Every physician has a crust or two in his pocket book; which also commonly contains two small plates of window glass. A piece of the scab is crushed on one of these plates, and when moistened with water, is applied by means of a puncture, or scratch. Scabs are sent to distant places, and are carried in the pocket for weeks. —Certainly the genuine vaccina has been produced with matter used in this manner; and it has repeatedly *exterminated* the small pox.

Dr. Gregory insists on the employment of a lancet even sharper than one fit for venesection—but we know that a gentleman here who vaccinates an immense number annually, prefers a *broken* lancet. If the lancet be broken off about one twelfth of an inch from the point, it may be pushed against the cuticle so as to abrade it without the loss of any blood, (which is the most frequent cause of failure, as the blood washes off the virus,) and then some of the dissolved virus is placed and pressed on the scratched part: this practice rarely fails. We have used the scab after keeping it several months; and if carefully watched, the vesicle produced will, in such cases, be found strictly conformable to the character which the true vaccina ought to possess. Dr. Gregory recommends also that the skin be stretched during the operation, that there should be several punctures arranged in a circle, that the lymph should not be taken after the eighth day, (the fourth and fifth is better,) and also that the subject to be vaccinated should be in perfect health. He keeps up the directions as follows: "See that the child be in good health, and free from any cutaneous affection. Select from a healthy child, lymph of the sixth, seventh or eighth day. Be careful that your lancet be extremely sharp, and if it be broad shouldered so much the better. Let there be a tangible drop at the end of the lancet, and be not satisfied with a mere moistening of the instrument. Let the skin be kept perfectly tense during the time of insertion, by grasping the arm of the child firmly and extending the skin between the thumb and first finger of the left hand. Let the lancet be inserted from above, downwards, and at each fresh insertion dip the point of the lancet in the lymph that remains around the incision *first* made. Make from six to ten punctures in a circular form, enclosing a space about the size of a shilling. At each insertion press the point of the lancet firmly against the lower surface of the wound."—*Lond. Med. and Phys Journal, Nov.* 1826.

19. *Medical Profession in London and Paris.*—In the London Med. and Phys. Journal for Oct. 1826, it is stated, that the number of physicians (*i. e.* fellows of the Royal College, licentiates, &c.) who practice in London and seven miles round, amounts to 174. The whole population amounts to 1,200,000—one physician for every 7000 souls.

Upwards of 800 members of the Royal College of Surgeons practice in the same capital; and as by the law, all medical officers, whether of the army, navy, or E. India Company, are entitled to practice as surgeons and apothecaries in every part of the British dominions, many of them, say 200, may be added to the list of surgeons; making a total of 1000 practising surgeons, or one to every 1200 inhabitants.

The whole number of apothecaries entitled from various sources to practice as such, probably equals 2000, or one apothecary for every 600 inhabitants.

Thus, in London, the physicians are to the surgeons as one to six, to the apothecaries as one to twelve, and to both united as one to eighteen.

In Paris, there were in 1822, 600 physicians; being, on a population of

800,000, one physician to every 1,333 inhabitants, or five times more than in London.

In the same year there were in Paris 128 surgeons, being one to 6250 inhabitants, or four-fifths less than in London.

Taking the three branches of the medical profession in Paris, and supposing the distribution of them in that capital to be the proper standard—viz. 600 physicians, 128 surgeons, and 181 apothecaries, they are together about 900, or at the rate of one to every 900 inhabitants; whilst in London, if the computation of 174 physicians, 1000 surgeons, 2000 apothecaries, and 300 chemists and druggists, be correct, the total number is 3474, or at the rate of one to every 345 inhabitants. In Paris, then, under a due distribution of the three branches, the expense of maintaining each individual engaged in the profession, is divided among 900 persons, whilst in London it is shared among 345; the actual expense to each inhabitant of the latter, being nearly treble the expense to each inhabitant of the former city. It is supposed that in Philadelphia there are about 200 physicians, surgeons, and obstetrical practitioners; which, in a population of 150,000, will give one for every 750 inhabitants.

20. *Affection of the Pancreas*—Dr. JALLAT relates in the Bibl. Med. for June 1826, the case of a girl 23 years of age, who, after having suffered for several years a copious salivation, which indicated a diseased state of the pancreas, became affected with pain in the larynx and trachea; she had cough, afternoon exacerbations of fever, vitiated secretions and excretions, with obstinate constipation.

On the third day of treatment, the patient felt decidedly relieved by the operation of the purgatives she had taken; but the pulse became convulsive, trembling of the limbs came on, and there was a great loss of appetite, with extraordinary redness of the tongue. On the seventh day, after a restless night, considerable vomitings of greenish matters occurred, the head and neck were covered with sweat, the extremities cold and trembling, there were trismus, dyspnœa, abdominal pain, subsultus of the tendons, and diarrhœa; and the patient sunk. On opening the body, the lungs were found wrinkled, but there was no other alteration in the breast. The pancreas was enlarged, and some of its excretory canals were obstructed. The coats of the stomach were *corroded* by a lumbricus, which had penetrated into the abdominal cavity. This case is carelessly drawn up, and perhaps may be regarded as a doubtful example of diagnosis; but such is the rarity of the disease, that it may not be unacceptable, with all its faults, to our readers.—*Journal Universel. July.*

Another case is related from a German journal, in which salivation came on, but was arrested by brandy. This patient died emaciated, and on examination after death, the pancreas was found entirely changed into a hard cartilaginous mass, its duct partly closed, but the other viscera natural.—*Rev. Med. July.*

21. *Bilious Dysentery.*—M. LACHEZE, a physician at Angers, has communicated to the Royal Acad. of Med. the history of an epidemic which prevailed in Sept. and Oct. 1825, in some communes of the department of Maine et Loire. Mr. L. could not discover any cause for the appearance of this epidemic in the topography of the districts where it prevailed: they are generally very salubrious. The symptoms consisted of vomiting of porraceous bile, constant colics, fever, insatiable thirst, frequent bloody stools, and finally prostration.

In less than twenty-five days, out of a population of 300, 250 inhabitants were attacked. The treatment which was successfully administered consisted, 1. of an emetic of ipecacuanha in the commencement of the attack. This always procured prompt relief, by arresting the dysenteric flux, even when employed a week after the invasion of the disease. Leeches to the anus were required only in a few plethoric individuals. 2d. The emetic was followed by some manna or Tronchin's marmalade, in order to change the nature of the stools; by small emollient injections, (demi-lavements,) &c.

If the pains lasted longer than four or five days, rice water, containing fifteen or twenty drops of wine of opium to the pint, was exhibited; or thridace, (*lactucarium,*) in a dose of six grains in an ounce of syrup of marshmallows. If the flux became chronic, it was combatted by pills of bark, ipecacuanha, and opium. Mr. Lacheze thought he had some reason to believe this a contagious dysentery.—*Archives Generales. Aout.*

22. *Compression in Erysipelas.*—Our readers are aware that the Baynton method, as it is called, of treating ulcers of the extremities with adhesive strips and rollers, is very successful. The method of compression has been adopted in France in the treatment of erysipelas, scalds, burns, &c. The most admirable results of this practice are recorded in the Archives by M. A. Velpeau. Erysipelatous affections arising from wounds have yielded most happily to a compress and roller. He cites a case also, given him by M. Bretonneau; who, having upset a vessel of boiling water, received its contents on his leg and the upper part of his foot, which parts were blistered by the accident. The pain was intense, and, not finding entire relief by plunging the limb into cold water, he had recourse to his "*accustomed method.* A roller, six ells in length, was applied, and I had almost no suffering. From this moment I could walk; by the end of the second day the epidermis was *re-applied* to the skin, and I thought I could leave off the bandage: but, at night, I felt a slight smarting at the instep, and in the morning found a small blister precisely at a point where the bandage had been less exactly applied, in consequence of the conformation." This blister disappeared, and the accident was completely terminated in a few days. By the paper of Mr. Velpeau, it appears, that in a burn of the slightest or first degree, a compressing bandage prevents the development of inflammation; in the second degree, it hinders the occurrence of blisters, or, if not employed sufficiently early to do so, re-attaches the epidermis, and occasions the absorption of the effused serum. In the third degree, it cannot prevent an eschar, but renders the accident less painful, and brings more speedily a favourable termination.—*Archives Gen. July.*

23. *Letter from a physician travelling in Italy.*—The Edinburgh Medical and Surgical Journal for October contains extracts from a letter of a physician travelling in Italy. We extract the following.

"The Roman physicians occupy themselves but little with the doctrines of the north of Italy. Hippocrates and the older authors are still their favourite masters, and some of the medical men are very deeply read in them. Some of the professors set a bright example of industry to their pupils, but I cannot say that there appeared to be much enthusiasm prevailing amongst the latter. The clinical lectures are delivered *extempore* in a room adjoining the ward. At the University, the professors sometimes lecture in Latin, at others in Italian; but the hour is rather curiously disposed of. It is begun and closed by a hasty prayer, and the intermediate space is about equally divided between a Latin dictation, which the pupils transcribe verbatim, and the *extempore* lecture. Some of the hospitals are very large; this is particularly the case with the Santo Spirito; but though there are wards capable of holding more than two or three hundred each, absolutely unoccupied, there are others so crowded as to have three and four rows deep of beds on each side. This is said to be done for economy. The windows are high, and the part which opens small; the wards are consequently badly ventilated. There are admirable conveniences for dissection, and very good anatomical theatres; but these advantages seem to be rather neglected. The most striking and numerous preparations in their anatomical collections are monsters, aneurisms, which, for the credit of the Roman surgeons, appear to have been treated by the old method of amputation, and the nervous and vascular systems, laboriously but uselessly detached from the other textures. The hospital which, by its construction and neatness, pleased me most, is devoted to diseases of the skin. The house-patients are all from the neighbouring country, the Romans being only admitted as out-patients. The greater number of inmates are children affected with tinea capitis. They are set to work, and paid their earnings on leaving the establishment. The mode of treatment is remarkable. The hairs are plucked out by the roots, by means of pliers resembling blunt bell-hangers' pincers. The children mutually perform this operation for each other, and it requires to be often repeated. When the hairs are removed, the little patients come under the hands of a priest; who, with a razor which he hones afresh for every individual, makes slight incisions all over the scalp, which is suffered to bleed for a considerable time. A simple ointment is then applied to the head, which is habitually covered with a bladder. There are merely simple warm and cold baths in this hospital. The lunatic asylum is only a place of confinement, as no means are made use of to promote a cure. At Rome, I met with but few new medical works. I may mention a short but interesting pamphlet on hydrophobia. The author, who formerly lived at Tivoli, but now resides at Rome, seems nearly to have demonstrated that this most distressing affection is only communicable by the animal in which its origin was spontaneous; and that bites inflicted by those who receive the disease from him, are quite harmless. The author ascribes the disease to the venereal appetite, provoked but not gratified.—*Ed. Med. and Surg. Journal. Oct.* 1826.

24. *Epilepsy.*—Dr. Usher Parsons, of Providence, relates a case of epilepsy, of an obstinate character and long standing, cured by Dr. Mansfield's galvanic treatment. In this case, Dr. Parsons removed the cuticle on the back of the neck by means of a blister about the size of a sixpence, and a similar portion from the inside of the knee. To the sore on the neck he applied a small silver plate, which had a small staple affixed to its lower edge, in which was fastened a conducting wire. The wire was extended down the back into a belt of chamois leather fastened around the waist; it was continued in this belt round the side, until opposite the groin, and thence down the thigh, until it reached, and was attached to, a zinc plate placed over the sore on the knee. Dr. Mansfield's directions are to apply to the sore a small bit of sponge moistened in water, and corresponding to the denuded place in the neck. Over this, a large piece of the same size as the metallic plate, also moistened, is to be laid, and next to this the plate itself, which must be secured by adhesive straps. The wire down the back should be long enough to permit free motion of the body. The zinc plate at the knee is to be fastened in the same manner; with the exception, that for the second layer of sponge a layer of muscle must be substituted. The apparatus will continue in gentle action from twelve to twenty-four hours; when the sores require cleansing, as well as the plates. Dr. Parsons applied this apparatus to his patient; who discontinued its use after a perseverance in it of six months; and although two years have elapsed, he has not had an epileptic paroxysm since the date of its first application.—*New England Journal of Medicine and Surgery. October.*

25. *Treatment of Exanthematous Ophthalmia.*—We have sketched the accounts of this disease, above, in our article *Pathology.* We here insert the mode of cure.

The ointments, opiates, collyria, &c. commonly used in diseases of the eye, appear productive of but little benefit; and nothing should be used locally but warm water. The main dependance is on purging with calomel, at first in doses of several grains, and then as an alterative—generally calomel and rhubarb every other night, and jalap or senna the following morning. In the decline of the disease, carbonate of soda and potass, rhubarb, and the bitter infusions, are resorted to. Rigid diet, a light dress, in particular *light coverings to the head*, cutting the hair close, sponging the head with warm water, a succession of blisters behind the ears, or to the back of the neck, antimonial pustules on the scalp, scarifications of the inside of the eyelids, ointment of red precipitate, introduced in very small quantities (diluted?) between the lids, and re-applied, where there are specks or ulcers on the cornea, every four or eight days, form the rest of the treatment. Relapses are prevented by regulating the digestive viscera, and by keeping open a seton or issue about the head.

26. *Treatment of Croup, Angina Maligna, and A. Gangrenosa.*—Our readers will recollect the description of Mr. Bretonneau's observations on these diseases, under the article *Diphtheritis*, in Section *Pathology* of the present quarterly summary.

Mr. Bretonneau thinks that the real diphtheritic inflammation, or croup, is rarely susceptible of a natural cure, in consequence of the constant tendency of the coriaceous inflammation to spread along the mucous membrane, without leaving the parts originally occupied. This author declares, that, in the form of disease which he describes, he has found that topical treatment in the early stage, and calomel in the succeeding period, were the only means resorted to with any success; and positively asserts, that neither bleeding, leeching, blistering, vomiting, nor purging, were productive of any benefit. Of all external applications, he seems to have given the preference to the hydrochloric or muriatic acid. The following is his mode of applying the remedy.—"This acid, when applied in a concentrated state, to a sound mucous membrane, causes a coriaceous or pellicular inflammation. A slight superficial touch blanches the epithelium, which is detached, and renewed without erosion. But if the action of the acid be prolonged, or its application renewed at short intervals, it produces an ulceration covered by a whitish concretion, which requires a longer or shorter time to cicatrize. It is necessary to be aware of these facts, when we have recourse to this acid with the view of modifying the diphtheritic inflammation; in order that we may not confound the phenomena of the remedial process with those of the disease. *The best plan is to let the first applications be energetic, and not too frequently repeated.* Dr. Bretonneau has tried various modes of applying the acid to the pharynx and tonsils, and the following is that which he prefers. A piece of fine sponge is to be securely fixed on the end of a flexible whalebone probang, which is to be bent to a convenient form by heating and softening it in warm water. The sponge is to be dipped in the concentrated acid, and then gently pressed, so as to be left just moistened with the fluid. This precaution is necessary, lest, in the convulsive movements of the palate, some acid should be diffused beyond the parts designed to be cauterised. By these means, it is easy to apply the acid; and its strength can be graduated by various proportions of honey. When thus diluted, it spreads beyond the part with which the sponge first comes in contact, and is only to be used in this manner when the diphtheritic inflammation has gone beyond the reach of the eye, in its progress downwards.

The first effect of this topical treatment, is to give the incipient inflammation a graver aspect. The concretions appear to be thickened and more extended. In 24 hours, the action of the acid will have reached its utmost boundary. If the concretions do not now appear to have extended, or if they are becoming detached, we may prognosticate that the specific inflammation is already modified, and the topical application need only be made at lengthened intervals, and of a weaker power. For the cases illustrative of this mode of treatment, we must refer to the work itself. It will be sufficiently obvious that this practice can only apply, with any prospect of advantage, to the diphtheritic inflammation in the mouth and fauces. When the exudation has spread into the larynx and trachea, it is, of course, beyond the reach of sponge and acid. Some other mode of treating the disease must then be pursued.

Mr. BRETONNEAU resorted several times to fumigations of hydrochloric acid, when the diphtheritis had extended to the mucous membrane of the larynx, and it was no longer possible to apply to it the concentrated acid. This plan, however, is not recommended by him; for although he cured five out of six patients, on whom the experiment was tried, the sixth was evidently injured by it; and Mr. B. found in calomel, a resource equally efficacious and much less hazardous. He, however, adds, "There are circumstances, (very rare it is true,) where the calomel itself may prove a poison; and in such cases, it would, perhaps, be better to try the acid fumigations than to abandon the patient to inevitable death."

He directs the calomel to be given in doses of one or two grains every hour, mixed with sugar, and placed on the tongue. In this manner, the mercury acts topically, as well as constitutionally and on the digestive organs. Nor does he neglect mercurial frictions, his object being to bring the system under the effects of mercury as soon as possible.

Our readers will perhaps recollect, that, in the first volume of this Journal, p. 219, we called their attention to the method of treating croup proposed by Mr. MACKENSIE, of Glasgow, as well as to this gentleman's views respecting the formation and extent of the croupal membrane. They will now perceive the remarkable coincidence of views, as well theoretical as practical, between Mr. B. and the Scotch physician. To the former, the credit of priority is doubtless due; since the first chapter of his work was read before the Academy of Medicine in the year 1821, five years before the publication of Mr. MACKENSIE's paper. The only difference between them in point of practice, is, that Mr. BRETONNEAU uses hydrochloric acid, and Mr. MACKENSIE the lunar caustic. Dr. JOHNSON, from whose esteemed Review the substance of this article has been drawn, grounding his opinion on the facts that Mr. GUERSENT "had long previously to Mr. MACKENSIE's publication, given an outline of Mr. B.'s pathology and practice in the new Dictionary of Medicine, under the articles *Angine Couenneuse* and *Croup*," and that Mr. M. is intimately acquainted with the continental writings, thinks he must not only be deprived of the claim to priority; but that some will be induced to suspect that he "could hardly be ignorant of the doctrine and therapeutics of Dr. BRETONNEAU, at the time he published his paper in the Edinburgh Medical and Surgical Journal.

27. *Endermic Medication.*—In the second volume, p. 176, of this Journal, we offered an interesting case of chronic abdominal inflammation, (extracted from the Archives Générales, for March, 1826,) in which Mr. DUBOURG, of the Hospital de la Pitié, had resorted to the acetate of morphia applied to the denuded cutis. This practice seems to occupy, at the present time, a more considerable share of the attention of French physicians than it had formerly done; and it now appears that Mr. DUBOURG is not entitled to the credit of having first resorted to it in Paris. At a meeting of the Academy of Medicine, held on the twenty-third of May last, Mr. ADELON read a report on a memoir on this subject by Mr. LESIEUR, physician at Franconville, by which it is plainly seen that the author resorted to this plan long before Mr. DUBOURG. "In his memoir he (Mr. LESIEUR) first indicates the manner of depriving a portion of the skin of its epidermis, in

order to have a surface capable of absorbing the remedies; these means are vesications, the choice of which is immaterial, if the patient be little irritable, and if the disease treated will be benefited by a revulsion: in the contrary case, it is necessary to select those that act but slowly and cause little pain, as the blistering taffetas, the bark of the daphne gnidium. Care must be taken to remove the vesicating substance as soon as the vesicle is formed, if we wish to prevent the absorption of its molecules, and the subsequent internal excitation. In order to act more promptly, a piece of cotton, dipped in sulphuric acid and inflamed, or in boiling water, liquid ammonia, or concentrated acetic acid, may be employed, or else a small wound may be made with a bistoury." The place is unimportant. M. Lesieur next exposes the manner of keeping the surface, destined for the absorption of the remedy, in a necessary state of denudation. He recommends the substance to be applied only at the centre or circumference of the denuded surface, or else to combine it with the epispastic ointment employed in the dressing, or with cerate or gelatine, if it be capable of exciting a copious suppuration. "At each dressing, the residue of the substance must be carefully removed, as well as the albuminous membranes which are so frequently formed on cutaneous surfaces in a state of suppuration. He has never seen cutaneous inflammation supervene; if it should occur, it ought to be treated by means of topical remedies and emollient baths." In another part of his memoir, Mr. L. treats of the mode of application of the substance. He recommends one or two mediate applications to be made, with a view of accustoming gradually the derma to the contact of the substance, and thus preventing pain: and after these immediate applications are to be resorted to, and if the substance employed be solid and in powder, it must be sprinkled over the surface. If it be in form of extract or conserve, it must be used as an ointment. This must be particularly observed, if the substance be very active in a small bulk. If it be liquid, a piece of lint must be soaked in it, and applied to the denuded surface, or else it must be used in form of bath. If gaseous, it would be necessary to have a vessel armed with two stop-cocks: the one to form a vacuum in the vessel, and the other through which to introduce the substance employed.

The following, according to Mr. L., are the advantages resulting from this mode of medication:—1. It can always be employed when the others are contra-indicated. 2. It obviates the necessity of the topical action of remedies on the digestive tube, which is sometimes affected and diseased by it. 3. The patient is spared the disgust excited by medicine in the senses of taste and smell. 4. It affords the means of using remedies without the knowledge of the patient. 5. It allows us to graduate at pleasure the effect of the remedy, since we have the power of removing it. 6. To produce more sudden effects. 7. To employ substances in the smallest possible doses. 8. To prevent the effects of the digestive, and consequently decomposing action of the stomach upon them. 9. Finally, it furnishes us with a means of discovering which, in each substance, is the active principle; since we can examine the substance after its employment, and see which of its elements has been lost. M. L. concludes his memoirs with an account of seventeen very interesting cases which he observed at the Hospital Cochin, at a Maison de Santé, and at the Bicêtre. Of these cases, four were of chronic catarrh, which were cured by means of the acetate of morphia applied in this way; two of phthisis pulmonalis, which were greatly relieved by the same means; one of pleuritic pains, which had resisted the usual remedies, and were also relieved with the acetate. The eighth case was one of intermittent neuralgia of the temporal region, in which the same remedy was successfully employed. The ninth was hemiplegia: strychnine was employed, and produced tetanic symptoms; which were relieved by substituting the acetate of morphia for the former remedy. M. L. suggests the propriety of treating tetanus by means of this substance applied in this way. In the other cases, M. L. used the sulphate of quinine, musk, tartar emetic and kermes mineral, by means of which he cured intermittent fevers of various types, convulsive coughs, accompanied with a sense of suffocation; he excited diaphoresis, &c. Messrs. ANDRAL, senior, GUENEAU DE MUSSY, DOUBLE, CHOMEL, and SEGALAS, were appointed a committee to make experiments on this mode of administering remedial substances; sufficient proof that the Academy of Medicine of Paris regard this subject worthy of serious attention.

28. *Epilepsy cured by Tartar Emetic ointment.*—M. PEYSSON, whose name has lately often appeared in the French medical periodicals, as the discoverer of the anti-periodical virtues of tartar emetic, has published in the August number of BROUSSAIS's Annales, an interesting case of epilepsy cured by means of tartar emetic ointment.

The patient fell from a height of thirty feet—he did not injure himself much, but was considerably alarmed. Three weeks after this accident, he was affected with ophthalmia, and next with violent cephalalgia, which returned every other day, accompanied with convulsive movements of the muscles of the face and eyes, and a haggard expression of countenance. By the physician who first saw him, he was treated by means of antiphlogistics; which, however, were productive of very little benefit. At the expiration of ten days, he was seized with all the symptoms of epilepsy. These returned several times a day; and were combatted by means of antiphlogistics, anthelmintics, sedatives, antispasmodics, and cinchona, and finally, the usual anti-epileptical remedies were resorted to; but all without any other effect than that of rendering the attacks less violent and frequent, and of shorter duration. At the end of two months from the first attack, his functions, particularly those of the brain, had become much altered; his mind having lost its usual energy. His voluntary muscles were now deprived of all power of contraction. He complained much, when questioned, of pain in the head and stomach. His urine was voided with great difficulty, and his constipation could only be obviated by means of injections.

Under these unpromising circumstances, M. PEYSSON was called in, and prescribed frictions with tartar emetic ointment, to the internal surface of the thighs, legs, &c. Four days after his first visit, Mr. P. found the patient much improved, out of bed, walking with the aid of a stick, answering better to questions put to him. His epileptic attacks had nearly disappeared; and were succeeded only by slight chills, which returned every evening.

The frictions were continued at intervals for one month; four ounces of the ointment were used, and a complete cure was effected, *without the appearance of a single pustule.* This seems to us the most extraordinary feature of the case; for in all trials that have hitherto been made with the ointment of tartarized antimony in epilepsy and other diseases, the cutaneous irritation and the subsequent suppuration appear to have been essential to the cure. Such at least seems to be the inference that should be drawn from the cases published by Dr. CARTER, an account of which will be found in vol. i. p. 221, and vol. ii. p. 415, of this Journal; as well as from the case published by Dr. ANGELOT, and to which Mr. P. refers. But we believe that Mr. P. is inclined to attribute rather too great an influence to the tartar emetic in this and other cases he has published; the relief appears really to have been here surprisingly rapid; and perhaps, on mature reflection, it will be suspected, that the patient was just about getting well when the ointment was used.

In a memoir presented to the Academy of Medicine of Paris, an account of a report upon which, by M. **Louyer-Villermay**, is contained in the Revue Medicale for August, 1826, M. **Peysson** has related three more cures of epilepsy, and by the same remedy. He appears to claim the credit of originality respecting the benefit of the external application of tartar emetic; a claim which appears to be fully conceded to him by the reporter. In answer to this, however, it will be sufficient to refer them to the British medical periodicals of the last few years.

29. *On the Use of the Cyanogenated and stupifying Baths, and of the purgative cyanogenated Syrup of* Dr. **Paganini**.—In the number of the Journal Universel des Sciences Médicales, for July 1826, we find the following remarks respecting the above mentioned remedies.

"In a number of acute diseases, even of an inflammatory nature, the irritation of the nervous system and of the medulla spinalis, plays an important part, and merits a particular attention. Many chronic diseases of the intestinal tube, of the liver, bladder, &c., are only nervous inflammations. The pain is one of the most prominent symptoms. They are but temporarily relieved by bleeding; and even at an advanced period, it may be allowed to think that the tissues have not yet suffered much structural alteration. Opium and acupuncturation are frequently resorted to in such cases with great effect; but Dr. **Paganini** often prefers to them the new means we have alluded to above. His bath is composed of simple water, in which is thrown, in ordinary cases. four ounces of the distilled water of the lauro-cerasus or of the bitter almonds; he increases or diminishes the dose according to the age, and susceptibility of the patient, acuteness of the disease, &c. In order to render the bath still more stupifying, he adds some hyoscyamus, cicuta, and particularly some datura stramonium. In some cases he uses one ounce of their extract; at others, four pounds of their decoction. In others again, when the indication seems to require it, he prefers their active alkaline principles.

The cyanogenated purgative syrup, which he remarks is particularly well adapted to the treatment of chronic inflammations of the intestinal tubes, consists in the addition of three ounces of the emulsion of bitter almonds, and six drops of distilled cyanogenated water, to one pound of cold syrup prepared with six drams of the senna leaves. The common dose is from two to six ounces per diem, according to circumstances.

This physician relates cases of paraplegia, of gastro-entero-peritonitis, which he calls nervous, of angiotitis simulating aneurism, of prosopalgia, &c., in which these means appear to have been successful."

Without pretending to adopt or reject all the pathological views contained in the above extract, we are disposed to think that the means recommended by Dr. **Paganini**, in the diseases enumerated, deserve considerable attention. We do not speak from actual experience with them, but from analogy; having prescribed, in such cases, the prussic acid with the most decided success. One of our patients was affected with gastralgia, and had suffered exceedingly for many months, and made use of many of the remedies commonly resorted to in dyspepsia. She was completely cured in a few weeks, by means of the acid; and has now enjoyed excellent health more than three years. Other cases have since fallen under our notice; and we were informed some time ago, by our intelligent and experienced friend Dr. **Thos. T. Hewson**, that he had been equally successful with the acid in many cases of the same complaint. Another of our patients had suffered nearly eighteen months under prosopalgia, or tic douloureux of the face, which had baffled all the usual remedies. He had been only momentarily relieved by acupuncturation; prussic acid, continued for several months, and pushed to pretty large doses, may be said to have cured him, as he now only occasionally complains of a dull and *slight* pain in the part. We have likewise prescribed it in several cases of pains in the intestinal canal, which appeared to us to be of a purely nervous character, and unconnected with much inflammatory action. In one or two of these instances, the pain was very severe, had continued long, and resisted the most commonly successful plans of treatment. It gave way to a persevering use of the acid, aided by a light and nutritious diet. Nor was the acid less successful in a case of morbid watchfulness of long standing, which came under our care some time ago.

As we are in the habit of prescribing the prussic acid more frequently than most physicians, and of noting carefully its effects on the system, we shall on some future occasion enter more fully into the subject than is compatible with the limits of this article.

30. *Aloes in Hæmorrhoids.*—Extract of a letter from Dr. Crockett, of Lexington, Kentucky. "Strange as it may appear, I am fully persuaded, that aloes, when properly administered, is the best remedy that can be employed in piles. It has been for a long time the principal remedy used in this disease, by Dr. Richard Pindell, formerly of Hagerstown, Maryland, but for many years a successful practitioner of Lexington.

"After the bowels have been evacuated, and the inflammatory action reduced, he administers the following tincture:—

R. Alöes socotorinæ,
Seminum Anisi, aa ℥ij.

"Reduce to fine powder, and infuse in a quart of French brandy for forty-eight hours, frequently shaking the tincture. Of this, the dose is from one-third to half a wine-glass, repeated two or three times a day, so as to produce several soft stools, and to be continued until the patient is entirely relieved.

"As this practice may by some be deemed paradoxical, I will state what I conceive to be the modus operandi of aloes in hæmorrhoidal affections. No doubt, a very fruitful source of mischief from aloes in such affections is to be found in the frequent administration, in domestic practice, of the various kinds of aloetic pills vended in the shops as patent medicines. As these become very hard by keeping, it is easy to conceive, that they may pass through the greater part of the alimentary canal, without undergoing much change; but at last, becoming softened and dissolved, they may be supposed to expend the whole of their stimulating effects upon the lower portions of the tube, and more especially the rectum. On the other hand, when the medicine is given in the liquid form, its operation commences much higher up, and acts more generally, throughout the whole alimentary canal, without producing local irritation in the neighbourhood of the hæmorrhoidal vessels. In addition to this view of the subject, it will be recollected that carminatives possess, to a certain extent, an anodyne quality, which enables them, when combined with purgatives, to lessen the irritation created by the latter.

"From the trials which have been made with this tincture, it may be considered as not only a safe, but very efficacious remedy. It is well known and admitted by many of the most scrupulous, that there are a few prescriptions or combinations of medicines, which, though sometimes accidentally, have been termed *lucky*, because they seem to be so precisely adapted to the purposes for which they were intended; and such, I feel well assured, is the tincture which is here recommended. Indeed its good effects have been so general, that I am almost induced to attribute to it a specific action in hæmorrhoidal affections."

31. *On the efficacy of Tartar Emetic in Mercurial Affections of the Mouth.*—The following extract of a letter from Dr. J. B. Finlay, of the state of

Ohio, will, we believe, be read with interest; as any thing that promises to be of service in cases of severe mercurial affections of the mouth, must be viewed, in consequence of the sufferings of the patient, as entitled to the attention of practitioners. It is not many years since we were informed, through the medium of our respected cotemporary, the Philadelphia Journal of the Medical and Physical Sciences, that Dr. Field, of Virginia, had derived great utility from *emetics* in cases similar to those alluded to by Dr. Finlay; and although emetics when administered with a view of *puking*, may not act *precisely* in the same manner on the system as tartar emetic given merely as a *sedative*, (if indeed the remedy can be said to effect this desired object,) yet we are inclined to think, that the coincidence here pointed out argues much in favour of Dr. Finlay's plan, as in Dr. Field's method there must be nausea before and after the vomiting. But although conceding thus much, we must confess our inability to reconcile the statement of Drs. Field and Finlay, with that of Drs. Chapman, Klapp, Eberle, and other practitioners of this city, who have in general found that vomiting, or nauseating doses of emetic substances, favour the quick appearance of salivation, even in individuals little susceptible to the specific impression of mercury.

Extract of a letter from Dr. Jas. B. Finlay of Bainbridge, Ohio, to Mr. Finlay, student of medicine in this city, and communicated to the editors of this Journal by the latter gentleman.

"Some time last winter, in conversation with my partner Dr. Carpenter, on the subject of our successful use of tartarised antimony, according to Dr. Balfour's plan, in cases of inflammation and irritation which had come under our care, the thought struck me, that it might prove efficacious also in cases of *mercurial* irritation, and I suggested it by way of query to my companion, who agreed with me in opinion. Not long afterwards, the first case of mercurial sore mouth that occurred in our practice happening in the hands of Dr. Carpenter, he gave the lately suggested remedy a trial; and gratified me by announcing a complete triumph in the result. Since that time, we have had many opportunities of repeating the test of this powerful sedative in similar cases; and the result in all, confirms our implicit confidence in it. Our manner of exhibiting it is in doses of one-sixth to one-tenth of a grain, in solution, every hour, with a view to a continued mild operation on the skin and bowels, until the cure is effected. In every instance, when thus given, it immediately checks the progress of the disease, in twenty-four hours produces very great relief, and seldom fails in forty-eight hours to remove all complaint of sore mouth and throat. The most chronic case of the disease combatted with the medicine, was one of three months standing, in which the fauces were highly inflamed and ulcerated; the cure was speedy and effectual."

32. *Zona cured by Nitrate of Silver.*—In the last number of this Journal, (p. 416,) we offered an extract from an essay of Mr. Ernest Geoffroy, on the efficacy of Nitrate of Silver in Zona or Shingles, published in the April number of the Révue Médicale. We find, in the August number of the same journal, some additional cases in illustration of the success of the same practice. The first was communicated to the author, Mr. Lambert, by Mr. Serres, and the others occurred in the wards of Mr. Lisfranc, surgeon in chief of La Pitié. In the first case, the disease was situated on the back of the left hand, and on the superior, posterior part of the left shoulder. The parts were cauterised on the 22d of April. An hour after the operation, the patient experienced an acute and burning pain; which disappeared in the course of the day. On the 23d, the inflammatory symptoms had subsided, with the exception of a few pustules; whose continuance was ascribed to the neglect of opening them and discharging their contents.

This was now effected, the parts cauterised, and the next day the patient was cured. The eschars were removed in a week, and no marks were left.

In the second case the zona was situated on the thorax; the lunar caustic was applied all over it, by means of a camel's hair pencil, and produced a violent pain, which, however, subsided in the course of ten or twelve minutes. In the evening, the pain of the zona (which at that period had always been worse) was much less severe than on the preceding days. The next day, a few pustules which had resisted the action of the nitrate of silver, were touched separately with it, and on the fifth day the cure was complete. "It is to be remarked," says the author, "that the gastritis which had been developed at the same time with the zona, disappeared together with it."

In the third patient, the zona was situated in the same place as in the preceding case, and was likewise accompanied with symptoms of gastritis. The caustic was applied in the usual manner, and the patient discharged cured, on the sixth day after his admission into the hospital. The gastritis was treated by abstinence from food, lemonade, and rest; and disappeared together with the zona.

33. *Syphilis treated with scruple doses of Calomel.*—Mr. Boyle, surgeon to the Middlesex Infirmary, has described, in the November number of the London Medical and Physical Journal, a few successful cases of syphilis, treated by this method. We here subjoin one of these, in order to point out to our readers the effects of the remedy when used in this way.

"Henry Pitt, ætatis eighteen, a young man of delicate and slight habits, came under my care as a patient of the Middlesex Infirmary, on the seventeenth of June, 1826, for the treatment of a venereal chancre situated behind the corona glandis, superiorly, and a small but painful bubo in the right groin. Had been taking mercurial pills for four days, but the mouth was not affected. *Gave him a scruple of Calomel, with one grain of Opium, at bed time.*

"18th. Mouth sore; chancres evidently improved in appearance; bubo stationary. The bowels had been moved twice in the morning, without griping or uneasiness. 19th. Chancre improving in appearance; state of the mouth and bubo stationary. No medicine. 20th. Chancre healed; mouth more tender; the bubo, however, notwithstanding the early and continued use of the ordinary repellent measures, is larger; the fluctuation of matter is distinct, and the skin in the centre has become thin, is peeling off, and appears about to break.

"*Moxa to be applied round the base of the enlarged glands; followed by the application of adhesive straps over the part.*

"21st. Bubo evidently diminished in size; state of the mouth the same as it was yesterday.

"*Blue pill and antimonial powder, of each two grains, night and morning. The moxa and straps to be continued.*

"22nd. Bubo much reduced, the matter being all absorbed, having a depression in the centre, marking the situation previously occupied by it.—The moxa, straps, and blue pill, were continued till the twenty-eighth; when the patient was discharged."

In the other cases described by Mr. Boyle, the effects of the calomel administered in this manner were still more evident; but we have selected the preceding because it shows, at the same time, the efficacy of moxa in discussing glandular swellings. In most cases, the bowels were not moved by a repetition of the calomel, and calomel or blue pill were administered in combination with the antimonial powder to keep up the specific effect of the mercury.

This practice of treating syphilis by large doses of calomel, is certainly not new in this country, as it is frequently resorted to by the physicians of our southern States; and has been particularly eulogized by Dr. **Cartwright**, of Natchez, as may be seen in the first volume, p. 224, of this Journal. Mr. B. however, seems to deserve the credit of priority; as he laid down the practice in his work on syphilis, printed some years ago; and one of the individuals, whose case is mentioned in the essay before us, is said to have been treated in the same manner for a similar affection in 1822. In those cases, therefore, which will prove intractable *without mercury*, the plan recommended deserves trial.

34. *European Opium.*—At a meeting of the Academy of Medicine, Section of Medicine, held on the thirteenth of June, M. **Dronsart** read a memoir on the opium made from the papaver growing in France, which he considers as powerful a calmer of the nervous system as the exotic. He cited, in support of his opinion, the experiments made by the late Dr. **Bosquillon**, by professor **Fouquier**, by several English physicians, by M. **Loiseleur Deslonchamps**, as well as some made by himself. M. **Dronsart**, moreover, maintains that the French opium possesses over the Thebaic the advantage of never producing narcotism. In support of this, he cited the testimony of several physicians and pharmaceutists, and particularly of M. **Dubuc**, of Rouen, who tried on himself the effects of the French opium. He also brought forward some observations of M. **Loiseleur Deslonchamps**, and some of his own, in which the two opiums having been successfully used on the same patients, it was found that the sleep procured by the French was always exempt from a kind of intoxication and dreaming, which on the contrary accompanied that produced by the Thebaic opium. M. **Dronsart** announced, that at a succeeding meeting he would explain, by the chemical composition of the two substances, this difference in their action.

Having had the opportunity of seeing the French opium at the store of Mr. Durand, a very intelligent and well informed druggist of this city, we can confidently assert, that at least in appearance it surpasses the Asiatic; being cleaner and more purely gummy. Mr. Durand informs us that many physicians of this city have used it, and prefer it to the other.

35. *Medicinal properties of Madar, and its mode of preparation.*—In the first volume of the Transactions of the Medical and Physical Society of Calcutta, published in 1825, Mr. **Playfair** has given a pretty full account of the Madar and its medical uses. This substance is the powdered root of the *Asclepias gigantea* of Lamarck, the A. procera of Willdenow, a species very similar to the Madorius of Rumphius, the A. gigantea of Willdenow. In respect to the manner of preparing the Madar, Mr. **Playfair** remarks,

"The roots are dug from a sandy soil in the months of April and May. They are well washed in clear water till every particle of soil is removed; the moisture is then carefully absorbed by wiping with a cloth. Placed in the open air, they are allowed to dry so far, that the milky juice shall in some degree become inspissated, so as not to flow during the subsequent operation. The outside brown crust is then to be scraped off, and the rind left pure and white. The rind is now to be sliced off, or separated from the woody part, and dried for use. When reduced to a powder, it must be preserved in bottles, well corked, as it is apt to attract moisture."

The dose of Madar is five grains twice a day, or three grains three times a day. In some instances, however, the dose has been increased, without any bad effects, to thirty grains in the day.

"The diseases in which Madar has been found beneficial, are various. It acts as a powerful tonic and alterative, as a stimulant and deobstruent, and, combined with opium, as a sudorific.

"It has been given with great advantage in syphilis, in lepra, in cutaneous eruptions and dropsy, in rheumatism, hectic fever, tabes from glandular obstructions, tape worm, and intermittents. It stimulates the extreme vessels on the surface, and diminishes the velocity of the general circulation. It has been found very efficacious in that species of cancer, so common among the natives of India, called *Lupus*, and in all the varieties of leprosy or elephantiasis. In the horse, it appears effectually to cure the Bursattee, a disease common and destructive in this country; but I am possessed of too little veterinary knowledge to say whether it is a species of Farcy, or a disease peculiar to this climate."

To this, the Reviewer in the Edinburgh Medical and Surgical Journal, (from which we have extracted the above paragraphs,) adds, "Its sensible effects are not very obvious. We, however, observe, that it has at least produced nausea, with considerable heat of stomach, and that it had even been rejected. One patient observed it to have a diuretic effect, but to diminish the alvine discharge; but in another case it seemed to move the bowels. It did not appear to cause an increase of perspiration, nor sensibly to augment the heat of the surface, nor have its effects on the pulse been sufficiently ascertained; but it seemed, where there were ulcers, with passive inflammation, to impart a degree of activity to the small vessels, which led to a decided improvement of the sores."

V. SURGERY.

36. *The Non-Mercurial Practice in Syphilis* appears to receive new advocates almost daily. In addition to the facts already published in this Journal, vol. i. p. 38, and vol. ii. p. 170, we must mention that Dr. FERDINAND WILHELM BUCHER, of Berlin, has published a paper in the Archives für Medizinische Erfahrung, &c. for January and February, 1826, giving a history of the use of Mercury in Syphilis, and recommending its abandonment. Long extracts are published in the October number of the London Repository, which are to be continued. We learn also from the November number of the London Medical and Physical Journal, that Dr. GUNTHER, of Hamburgh, has made a series of experiments, the results of which differ but little from those which have been obtained by many surgeons in England and this country. "Bleeding, low diet, and perfect rest, were the means principally employed. If the patients were anxious for a rapid cure, mercury was exhibited. In many cases it was found that buboes were dispersed by pressure, even when matter could be distinctly felt in them. In females, chancres healed in from seven to twenty-one days; in men they required from fourteen days to a month."

In further confirmation of these views, we present our readers with an extract of a letter from Dr. BENJAMIN F. BACHE, acting surgeon of the United States' ship Ontario, and late surgeon's mate to the North Carolina; which last vessel sailed from Norfolk, in Virginia, in the spring of 1824, for the Mediterranean station. The letter is dated from the harbour of Smyrna.

"The most frequent complaints I have to combat on board [of the Ontario] are the sequelæ of extensive mercurial courses, resorted to by my predecessor, in syphilitic and other diseases. Very early in our cruise my attention was attracted to this subject, not only from what I had heard Dr. HARRIS say, recommending the anti-mercurial plan of treating venereal, but principally from observing, in every case on board the North Carolina, the very worst consequences resulting from the employment of mercury to salivation in this climate; it entailing, in every instance but two that I can recollect, (one of these a case of hepatitis, the other of fever,) disease in some shape, and of a severe character. In fact, so invariably injurious have I found ptyalism here, as entirely to exclude it from my practice. But independently of these considerations, were I to consult my own convenience, I never should resort to mercury in the diseases which would be called venereal that occur here. I have, since my transfer to this ship, had about a dozen cases of chancre and bubo, of which I have a detailed journal, and which have been cured promptly and most perfectly in a time much less than would, ordinarily, be required to induce salivation. So very manageable, indeed, have I found these cases, that I now never put a man upon the list which exempts him from duty, for this disease, so long as it does not affect the glandular system. My plan is simply this: when a man reports himself with simple ulceration of the part, which is *not highly inflamed*, I give him a bottle of "black wash," (calomel and lime water,) with instructions to report any unfavourable change which may occur. During this time he eats the ordinary salt diet of the ship, drinks his half pint of raw rum, (the inordinate allowance in the ration,) and does his ordinary duty in all sorts of weather. I generally have no more trouble; and rarely see the man again unless I take the trouble to inquire for him. If it happen, as it not unfrequently does, that the man has neglected himself until the appearance of buboes, I pursue the same course for the sores; and by two or three repeated blisters I find the swelling readily reduced, even in the last stages. Should the sore be irritable, a solution of the acetate of lead soon brings it into a fit state for the wash, as far as I have seen; although, of course, cases may present which would require some variation of lotions. In the two latter cases, viz. buboes and irritable ulcers, I keep the man at rest, "stop his grog," and furnish him with a light diet. These ulcerations, it is true, are not Hunterian chancres; and in truth, I have not seen one since being in the navy, out of some hundred cases; but I observe they produced with mercury the eczema, which I have often seen, and which was quite as obstinate as the most genuine chancre. This facility of treatment, in the venereal disease, is, I am persuaded, by no means confined to this climate; for I had an opportunity of testing it in a few cases at Norfolk, in diseases which had been contracted in different parts of the Union, and with uniform success. On shore there is much to recommend this plan, if it be as successful in other hands as in mine; but at sea, its advantages are incalculable. In the large proportion of mercurial diseases which I have seen, since leaving home, amounting, I think, to at least fifty in number, I have not been able to resort to the usual course of mercury, from the aforementioned experience. I have, therefore, resorted to murias hydrargyri, in doses of one-sixteenth of a grain thrice a day, continued for three or four weeks, with the decoction of sarsaparilla, ad libitum. There is nothing peculiar in this plan; except, perhaps, the minuteness of the dose, which I adopted after Dr. WASHINGTON, of the North Carolina. I have observed uniformly the most happy effects from this plan; not only in mercurial pains and eruptions, but also in chronic rheumatism from other causes, &c. and in dyspepsia."

37. *Amputation of the Lower Jaw.*—There seem to be no bounds to the bold and even successful experiments of surgeons of modern days. Ligatures to the arteries of the thorax and abdomen, not excepting the aorta; gastrotomy; the extirpation of the cervix, yea, of the whole body, of the uterus; the excision of diseased ovaria; the removal of necrosed ribs; the rooting out of the parotid gland; and now also, the amputation of large portions of the lower maxillary bone; are operations undertaken, and recommended by some of the most scientific, if not the most prudent members of the profession. We shall confine ourselves to a simple record of

facts,* without assuming the responsibility of recommending or discouraging similar enterprises. Let every surgeon, for a moment at least, imagine himself the patient before he resolves to operate.

From the July number of the Archives Generales, we learn, that M. Lisfranc presented to the Section of Surgery, in the name of M. Jensaul of Lyons, a wax model of a carcinomatous tumour affecting the whole left half of the inferior maxillary bone. This portion of the jaw was removed by M. Jensaul, after having secured the common carotid artery on the same side. (The event is not mentioned.) M. Lisfranc observed that a similar operation had been performed by a surgeon, M. Mott, of Philadelphia, (New York,) and moreover, that M. Walther, of Bonn, had removed the *whole* of the inferior maxillary, having previously tied *each* of the common carotids.

In the Edinburgh Medical and Surgical Journal, for October, Mr. Lizars reports another case, in which this terrible operation was performed by himself, for an osteo-sarcoma. The details of the operation and subsequent treatment are given; but, for want of room, we can only mention, that the operation was performed, Aug. 16th, 1826, on a healthy looking man, aged 36 years; that the whole right side of the bone and chin, from the ascending ramus, to the cuspidatus on the left side, was completely removed, that the subsequent symptoms were not severe, and that by the 2nd day of September, (the last date given,) both of the cut ends of the bone had granulated and cicatrized, the aperture in the mouth was reduced to a mere fissure, one-twelfth of an inch in length; the patient experienced no pain, was able to swallow soups, porridge, and minced meats, could sit out of bed, walk about his room, and was regular in his bowels.

38. *Popliteal Aneurism.*—Mr. C. Bell operated, in February last, for a case of popliteal aneurism, presenting the usual characters, excepting that it was situated further down than usual on the popliteal artery. In performing the operation no difficulty was experienced, and Mr. Shaw, who had his hand on the tumour, said, "that the pulsation had stopped;" but in a few seconds the pulsation returned, and in half an hour was nearly as distinct as before the operation. The patient remained well until the third day after the operation, when the pulsation in the tumour stopped, and the wound assumed a bad appearance, with the accession of febrile symptoms, cough, and pain in his limbs. He gradually sunk, and died on the sixth day. The whole line of the sartorius muscle had become swollen and tender, with a serous discharge from the wound.

On *Dissection.*—The sartorius muscle was found affected with an erysipelatous inflammation, which had spread along the whole course of its sheath. (?) The muscle itself was swollen, and tumid with serous effusions.

"Just below the part where the profunda was given off, the femoral artery was *divided into two nearly equal branches.* These ran down parallel to each other to the part where the artery passes through the tendon of the triceps muscle: here they re-united: the ligature was found on the more superficial artery, a little above this re-union. The aneurismal tumour and the popliteal artery were filled with coagulated blood; the coagula extended about an inch into the tibial arteries.—*Med. and Phys. Journ. for August.*

39. *Excision of the Ribs and their Cartilages.*—So many bad consequences result from necrosis, exostosis, and other diseases, of the ribs, by which life is not unfrequently destroyed, that surgeons have proposed to lessen these dangers, by completely removing the diseased structure. Some successful

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* Vide the former numbers of this Journal; in which most of these operations have been detailed.

operations of this character are now upon record; but as the advantages and disadvantages, the propriety or the impropriety, of this operation, are not sufficiently determined, we insert from ANDERSON'S Quarterly Journal, for October, the following summary of cases, in which excision was successful, under the hands of Dr. CITTADINI, professor of anatomy and surgery in the Royal Hospital of Arezzo.

CASE 1.—F. Laddi had for many years a fungus, resting on the cartilages of the sixth and seventh true and false ribs, about an inch from the ensiform cartilage. In February, 1820, Dr. C. operated, by removing a portion of the cartilages of the two last true, and of the first false rib, at the point of junction. The extent of the disease did not exceed two inches. The hæmorrhage from laceration of the fungus was profuse, but was quickly stopped by the actual cautery. The cure was accomplished in four months, and the disease did not reappear during the time, (two years,) that the patient survived.

CASE 2.—F. Boddi was found by Dr. C., in September, 1822, suffering from a necrosis of the cartilage and bone of the sixth true rib, in consequence of an extensive suppuration from a punctured wound. Having removed a considerable portion of skin, he detached all the muscles covering the carious (necrosed?) part, which was about an inch and a half; and having cut through the cartilage with a blunt-pointed knife, divided the bone with sharp nippers. The pleura was perforated in several places; by which air was admitted and respiration rendered laborious, but in a few hours the latter became natural. The wound healed in two months, and the patient has continued well.

CASE 3.—In January, 1824, Dr. C. operated on A. Cavalucci, who had a fistula, leading to a caries of the cartilages of the sixth and seventh ribs, at their junction with the sternum. Excision was resorted to. The subjacent pleura, which was much thickened, was torn in several places, and the hæmorrhage was considerable. The cure, which was delayed by some fragments of bone, was complete at the end of six months.

CASE 4.—In July, 1824, Dr. C. operated on the third rib, which was carious for the space of an inch, on the upper side of the bone, near its union with the cartilage. By means of a lenticular, the diseased portion of the rib was removed, the lower part being untouched. In three months the patient recovered. In these two cases there was no return of the disease.

40. *Removal of the Os Astragalus.*—Dr. ALEXANDER H. STEVENS, professor of surgery in New York, removed, last summer, the astragalus, after a compound luxation of the ankle joint, otherwise irreducible. The man has recovered, with very trifling deformity of the foot, and with a *flexible joint.* He walks with very slight lameness.—*Extract of a letter to one of the editors.*

41. *Staphyloraphy.*—This operation has, for the first time in this country, been successfully performed, by Professor STEVENS, of the New York College of Physicians and Surgeons. This gentleman has furnished us with the details of the operation and treatment; which, for want of space, we must unwillingly detain for our April number.

42. *Double Inguinal Hernia.*—Mr. HUGH FRASER, of Gibraltar, has communicated to the October number of the Ed. Med. Journ., the case of a stout man, thirty-five years of age, who, on the twenty-sixth of March, 1826, was attacked with the symptoms of an incarcerated inguinal hernia. The patient stated, that he had been twice ruptured, on the same side, within eight months. The operation was performed fourteen hours after strangulation, without opening the sac. The relief was partial, the bowels could not be emptied, and death ensued twenty-seven hours after the operation.

Sectio Cadaveris.—A portion of the ileum, about eight inches from its termination in the colon, was found strangulated at the inner ring. The sac of this hernia was very dense, and intimately connected with the surrounding parts; so much so, that I was not able, by any force I could apply with the fore-finger in the sac, to protrude it more than half an inch beyond the upper angle of the incision made in the operation, though this incision had been prolonged more than an inch in the direction of the inguinal canal after death. In short, this sac had every appearance of being of long standing. Immediately below the internal ring, or rather the opening of the above described sac, and separated from it by a "*bride*" a line in breadth, the peritoneum formed three or four very loose transverse folds; and the finger could easily be passed up from the wound, on the mesial and central aspect of this hernia, so as to protrude in the abdomen, and raise the loose folds of peritoneum before it. From the facility with which the finger could be here passed into the abdomen, it would appear that the hernia reduced in the operation had obtruded itself at this point, and that the sac containing the portion of ilium had not approached nearer the external ring. The piece of intestine, about three inches in length, lodged in this sac, was not gangrenous, but highly vascular; and the peritoneum all round showed, to a considerable distance above and below the point of strangulation, marks of inflammatory action. The internal ring was about five-eighths of an inch in diameter, and three inches from the external. This was clearly an example of *double rupture,* where both commenced at nearly the same point, and both observed the common dermal relation to the spermatic, and epigastric vessels."

43. *Wound of the Carotid Artery.*—Mr. TRAVERS has recorded, in the London Medical and Physical Journal, for October, a case of a punctured wound of the right external carotid artery, behind the angle of the jaw. The hæmorrhage was profuse and exhausting. Pressure was made by the dresser at St. Thomas's Hospital, until the arrival of Mr. TRAVERS; who endeavoured to discover the bleeding vessel, but unsuccessfully, owing to the depth of the wound, and the injection of the cellular membrane. He then secured the *common carotid artery;* the hæmorrhage ceased in a few seconds, and did not return. The patient was in a previously diseased state, suffering from delirium, &c. The wound only partially united. Inordinate inflammation ensued some weeks afterwards, followed by suppuration in the original wound, by the formation of an aneurismal tumour, and finally, by ulceration, giving rise to secondary hæmorrhage, which proved fatal *ten weeks* after the original accident. *Examination* showed, that a large coagulum had occupied the original seat of injury, and was probably the cause of the inflammation, assisted by the injury inflicted during the ineffectual efforts to secure the wounded vessel. The whole case is very valuable; as demonstrating, that *tying the main artery will be adequate to arrest hæmorrhage from one of its immediate branches*—a fact which is also confirmed, says the reporter of the above case, by a similar instance under the notice of Baron DUPUYTREN; who successfully tied the popliteal artery, for a hæmorrhage from the posterior tibial artery.

44. *Amputation of the Neck of the Uterus.*—At the sitting of the Section of Surgery, July 15th, a committee examined with great care, a female, on whom M. LISFRANC had, four months previously, performed the operation for amputation of the cervix uteri. They affirmed, that the neck of the uterus had nearly regained its natural conformation; it was only shorter than formerly: nothing indicated a return of the disease.—*Arch. Gen. for August.*

45. *Cancer of the Rectum cured by Excision.*—This operation was performed on the 15th of February, 1826, at the Hospital La Pitié, by LISFRANC. The patient, named Poulain, aged 45 years, was of a good consti-

tution, and in good health, but had suffered from hæmorrhoids for fifteen years; for some months previous, severe lancinating and intermittent pains were experienced, especially at stool. M. Lisfranc, on examination, discovered, that a portion of the rectum, occupying about an inch and a half of the mucous membrane, in height, and in circumference, was in a scirrhous state, and that the part which was inverted by straining presented eminences resembling the tumours at the verge of the anus. As this induration, &c. was attended with lancinating pain, Lisfranc assured the man that an operation was essential. After some ineffectual attempts to invert the diseased surface of the rectum, M. Lisfranc partially succeeded, by inserting into the rectum the index finger of the left hand, in a semiflexed position, and by thus drawing down the part while the patient threw the abdominal muscles into action. He now seized with a pair of strong curved scissors, and towards the verge of the rectum, a part of the tumour, which was incised as deeply as possible, without completely detaching this portion: this could now be more easily seized with the fingers, and by its means, the whole of the diseased part was withdrawn externally. The operation was continued by incisions in a circular direction, so as to remove at once (en masse) the affected tissues. On examination, about half of the sphincter ani was found removed. The hæmorrhage was abundant, but was arrested by filling the rectum with lint, and making pressure with a T bandage. In a few hours the dressings were forced out by severe bearing down efforts, with a return of the hæmorrhage. The tampon was again employed—some fever supervened—and another effort at stool during the night, forced out the lint, with coagula of blood.—No return of the bleeding,—and of course, no renewal of the tampon: no bad symptoms supervened. On the third day, a rectum bougie, of large size, was directed, to prevent the contraction of the rectum; and on the 12th of April the patient left the Hospital perfectly cured. Lisfranc recommended to him the occasional use of the bougie for four or five months. Vide Revue Médicale, for June. Whether the induration was really of a cancerous nature, in the present instance, or the result of simple inflammation, the success of this operation will afford a prospect of relief in cases hitherto regarded as desperate.

46. *Calculus in Females.*—So many unfortunate examples of incontinence of urine have occurred, after the common operation of lithotomy in the female sex, that surgeons have of late years paid more attention to the proposal of dilating the urethra. Many cases have occurred in which this practice has been successful; but the question, whether the dilatation should be made rapidly or slowly, is not yet decided. Both measures are unfortunately painful, giving rise to inflammation, and sometimes to fever; so much so, that Mr. Chevalier has seriously advised the high operation, or incision above the pubis, as superior to either mode. We subjoin the following summary of three cases, illustrative of these observations, taken from Johnson's Review, for October. The two first appeared originally in the Edinburgh Medico-Chirurgical Transactions, vol. ii.; the third in the London Medical Journal, for September.

Case 1.—A stout female entered, at the New Town Infirmary, Edinburgh, under the care of Dr. Hamilton, after having suffered from six to eight years with symptoms of stone. Dr. H. introduced Weiss's dilator, turning the screw two teeth. In an hour much pain was produced, and some drops of blood oozed from the vagina. The screw was turned another point, with increase of suffering, and a further discharge of blood. The dilatation was continued for six hours, until the urethra was three-quarters of an inch in diameter. The stone, however, could not be extracted, although in the grasp of the forceps. The dilatation was resumed, and continued for the night, which was passed in great torture; the diameter of the passage was now one-eighth of an inch more, and the patience of the woman was exhausted. As the stone could not be removed, Dr. H. now introduced a bistoury, and cut, at the angle formed by the junction of the bladder and urethra, upwards and outwards—thus dividing the bridle which prevented the egress of the calculus. No difficulty was now experienced in the extraction, and the patient soon perfectly recovered. The whole dilatation occupied eighteen hours. The stone was four inches and a half in its long circumference, by one and a quarter in its short. From *this* case, Dr. H. would give a preference to the slow dilatation of the urethra, by means of sponge tents, continued for several days.

Case 2.—By Dr. Alexander Ramsay, of Dundee. This was in a lady, 67 years of age, who had been afflicted with symptoms of calculus for twenty or thirty years, and whose constitution had eventually severely sympathized with the local complaint. The vagina was contracted, with some thickening and induration around the urethra, neck of the bladder, and rectum. Two weeks were spent, with very partial success, in dilating the urethra, by means of sponge tents—not without pain. Weiss's dilator was found more useful; and after ten days more the dilatation was sufficient for the extraction of the stone, with some difficulty, and a good deal of pain to the patient. The chief resistance was at the orifice of the urethra. The long circumference of the stone was five and a half inches, by three and a half in the short.

The local inflammation and the constitutional irritation were considerable, but they subsided; the functions of the bladder and urethra were soon restored, and the old lady enjoys good health.

Case 3. was a girl, only sixteen years old, who had, for several years, been complaining of lancinating pains in the bladder, and other symptoms of calculus. She eventually fell under the care of Mr. Chevalier; who commenced dilating the urethra, after having ascertained the actual existence of a stone. The dilatation was difficult, but eventually Mr. C. happily extracted a very rugged calculus, "the nucleus of which was composed of lithate of ammonia and oxalate of lime, surrounded by a mulberry calculus, projecting in noduli of more beauty than kindly qualities." It was more than an inch and a quarter in diameter. At first, the patient had little fever, the urethra had nearly regained its natural dimensions, and the healthy function of the bladder was apparently restored; but bad symptoms ensued—first, incontinence of urine; then a complete retention, until a slough came away; and next, incontinence of urine again occurred. Three months elapsed before her urine could be retained; and a still longer period before she was able to retain more than half a pint of water at one time in the bladder. She at length recovered completely.

VI. MIDWIFERY.

47. *Fatal Placental Presentation.*—In the September number of the London Medical Repository, Mr. James details the case of a female, seven months gone in pregnancy, in whom uterine hæmorrhage occurred, on the twenty-ninth of July, 1826.

Three pints were reported to have been lost—patient was faint—the pulse 90, and firm—os uteri admitted the point of the finger, but nothing unusual could be discovered. Rest, and cold applications were directed, with sulphuric acid and opium every four hours. After the third dose, profuse hæmorrhage followed; and before Mr. James could arrive, the woman was in a dying state. Finding a large protrusion of the placenta in the vagina, and the os uteri fully dilated, he endeavoured to thrust his finger through the weakest edge of the placenta; but failing in this attempt, he perforated the centre of the mass, seized the feet of the child, and brought them into the vagina. A pain ensued, but was not repeated; and as hæmorrhage followed, the child was extracted by mechanical means. Contraction of the uterus was solicited by the introduction of the hand; pressure was made on the abdominal aorta to lessen the extent of the heart's circulation, but all to no purpose. Life was gone.

In profuse *uterine hæmorrhages*, many expedients have been devised to preserve life. In the last number of this Journal, (p. 438,) we recorded the suggestion of Dr. Mojon of Geneva, to inject cold acidulated fluids into the vessels of the placenta; and we now call attention to a proposal of Dr. James, of making pressure on the abdominal aorta, and also on the vessels of the extremities by tourniquets, until the uterus contracts. "In this way, he observes, the heart, brain, and lungs, would receive an adequate supply of blood, for the sustentation of life." A similar practice was formerly recommended, and not without utility, by Dr. Kelly, in the cold stage of intermittents. We cannot, however, forbear again calling the attention of our European brethren to the administration of the secale cornutum, in cases of hæmorrhage after parturition: the exhibition of which, we confidently believe, would be instrumental in preserving many lives, which would otherwise be inevitably lost.

48, *Prolapsus Uteri.*—Mr. Cloquet communicated, on the sixth of July, to the Section of Surgery, the case of a female aged thirty-six years, the mother of five children, who for three years had suffered from a considerable swelling of the body and the neck of the uterus, with a prolapsus of that organ. The usual means failing, and the patient being thus unable to move, Mr. Cloquet effected a cure by means of pessaries, *cylindrical, curved,* and *flattened,* (deprimés) which he terms "elytroids," (élytroïdes,) and which, two years since, he made known to the academy. The uterus resumed its natural place and volume.—*Arch. Gen. Aug.*

49. *Graviditas in Uteri Substantia,* or *Graviditas Interstitialis.*—At p. 464, of the first volume of this Journal, will be found a notice of this variety of extra-uterine pregnancy, as described by Dr. Breschet, of Paris. This eminent physician has read a paper on the subject before the French Academy of Sciences; which has been reported on by the celebrated Geoffroy St. Hilaire; who has ventured an hypothesis on the manner in which this accident occurs, drawn from analogical observations made on oviparous animals. We have no room for the insertion of these views, a notice of which may be seen in the Medico-Chirurgical Review, for October. The following is a summary, presented in the Nouvelle Bibliothèque Médicale, of the cases hitherto recorded.

A case published in 1801, by Schmidt, in the sixth week of gestation.
1811, by Albers—at two months and a half.
1817, by Hederich—three months.
1821, ————eight months.
1823, by Bellemain—three months.
1825, by Dance—three months.
1825, by Moulin—two months and a half.
1825, by Auvity—one month.

50. *History of a Pregnancy, which ended in the discharge of the Fœtus at the Umbilical region, with the subsequent formation of an artificial anus.*—This history was originally drawn up by Dr. Weese, of Thorn, and published in Dr. Rust's magazine. We shall condense the account, as given by Dr. Johnson in the Medico-Chirurgical Review for October; especially as the

accident is very rare, and the peculiar state of exposure in which the intestines remained for years, is perhaps unparalleled. The cavity of the abdomen, among the inhabitants of our western states, and those of the continent of Europe, would seem more patient under accidents and operations, than is usually imagined by American or English surgeons in the larger and more luxurious of their cities.

Garecha, the wife of a Polish peasant near Thorn, now (1825) forty-seven years of age, was, in the year 1807, pregnant of her tenth child. Labour commenced at the expected period, the pains were regular and strong, and the membranes broke early. After violent and repeated efforts, the patient felt something suddenly burst internally, and at the same time there was a small discharge of blood per vaginam. The labour-pains ceased; as also the motions of the child, which had been before very distinct. The tumour of the abdomen, which was very hard, inflamed and suppurated; and through the fistulous orifice, the husband, who was her only surgeon, eventually removed the fœtal remains. At this place, the patient stated that a piece of intestine came through, increased in size, opened and discharged fœces; the discharge per anum diminished as the unnatural outlet enlarged, and after a time entirely ceased.

Dr. **Weese** examined the part diseased; and observes, that in the middle point of the abdomen, where every trace of the umbilicus is lost, there is a circumscribed, irregular and somewhat circular projection, with sharply defined edges, from between which two separated portions of prolapsed intestine protrude: the greater turns downwards from left to right, resembling an italic *S*. The intestines are of a bright red colour, and the edges of each portion of the intestine appear to have coalesced with the surrounding skin, so that there is no distinct separation between them. The peristaltic motion of the intestine was, on several occasions, distinctly observed by Dr. **Weese**; and he remarks that the outer coat of the intestine was much altered in texture, so that it appears like the newly formed skin of a cicatrix. The larger piece of intestine measured fourteen inches and six lines (Prussian measure) in length, and the other ten inches; and each was from two to three inches in breadth. They appear to come out of the abdomen at a common opening; and each of them has an orifice large enough to admit a finger; the fæces have here an easy exit, generally in small quantities at a time. The only support or protection afforded to the part is made by folding a piece of *course sackcloth* over it, and applying a moderate compress of the same material above. The patient has lived fifteen years under these circumstances, enjoys good health, menstruated regularly up to the preceding year, is able to attend to her domestic duties, and was seen by Dr. **Weese** digging the ground for potatoes.

VII. CHEMISTRY AND PHARMACY.

51. *Discovery of a new elementary substance, called Brome or Bromine.*—It would appear that a young chemist of the name of **Balart** has distinguished himself by the discovery of a simple body in the mother waters of sea-salt works. The process for obtaining it is as follows:—Subject these waters to the action of a current of chlorine, until a yellowish-red colour is developed. The colour is owing to liberated bromine, which may be separated by agitation with ether. Treat the etherial solution of bromine with pure potassa, whereby a bromide will be obtained, crystallizing in cubes. Mix this with peroxide of manganese, and distil with a portion of sulphuric

acid: and the bromine will be disengaged, and may be condensed in a receiver.

Properties. Bromine is a reddish liquid, possessing a very strong taste, and the odour of the oxide of chlorine. It corrodes the skin. It does not congeal at zero of Fahr., and boils at 116°. A single drop destroys animals. It "decolorates" indigo and litmus. Its vapour does not support combustion. It is soluble in water, ether, and alcohol. Sulphuric acid has no action on it. It combines with hydrogen, and forms an acid, proposed to be called hydrobromic acid. This acid is decomposed by chlorine, liberating vapours of bromine. When it acts on certain metals, it forms either bromides or hydrobromates.

The memoir of M. Balart was referred to the three most distinguished chemists of France, Gay-Lussac, Vauquelin, and Thenard, and they confirm the reality of the discovery. The discoverer, M. Balart, proposed the name *muride* for the substance; to which name there being several objections, the committee have proposed *brome* (which we render in English *bromine*) from βρομος, a disagreeable smell.—*Revue Médicale, Aout*, 1826. *Journ. de Chimie Médicale, Sep.* 1826.

52. *Mines of Platinum in Russia.*—It is stated, on the authority of Humboldt, that mines of auriferous platinum have been recently discovered in the Uralian mountains. The ore is said to be so rich, as to have diminished the price of platinum at St. Petersburgh nearly one-third.

53. *Instrument for ascertaining the Presence of Animal Matter in the Atmosphere.*—"Dr. Granville has invented an instrument, which, by means of a preparation of chlorine, enables him to ascertain, not only whether animal matter, in a state of decomposition, be floating in the air, but also the quantity of such animal matter; a knowledge which we cannot attain by the usual apparatus for analyzing atmospheric air, and the importance of which to the medical profession must be obvious. He proposes calling the instrument the *septometer*."—*Lond. Med. and Phys. Journ. Aug.* 1826.

We should be glad to see the details of the construction of the above-mentioned instrument; for we must confess ourselves skeptical as to the possibility, in the present state of science, of determining the conditions of the air above alluded to by any instrument.

54. *Formula for preparing Bichloride of Lime.*—As this chloride, besides its use in bleaching, is of great importance as a disinfector, applicable to the preservation of bodies before burial, or intended for dissection, the restoring of putrid bodies for medico-legal investigations, the correcting the fetor of sinks and privies, and, above all, the disinfecting of hospitals and lazarettos, it may serve a useful purpose to give the formula for its preparation, lately published by Labarraque in the Journal de Chimie Médicale. Place slaked lime, mixed with about a twentieth of common salt, in a tall earthenware pot. Let the beak of the retort containing the materials, be fitted to an opening in the side of the pot, on the same level with its bottom. Disengage the chlorine from a mixture of 576 parts of common salt, and 448 parts of peroxide of manganese, by means of sulphuric acid, diluted with three-fourths of its weight of water. Add the acid by degrees, by means of an S tube.—*Edinb. Med. and Surg. Journ. Oct.* 1826.

In the above account, no reason is given for the mixture of common salt with the lime; neither is it stated what quantity of lime the above mentioned materials will saturate with chlorine. On the first point, we would suggest that the salt may be intended to neutralize any sulphuric acid accidentally driven over, which it will effectually do by its decomposition, giving rise, at the same time, to muriatic acid, which may not be hurtful to the preparation. As to the omission of the proportion of lime, we may remark, that the proper rule is to continue the disengagement of the chlorine until the lime refuses to absorb any more.

When used as a preservative agent for bodies before burial, in warm weather, it is recommended to dissolve the bichloride in about forty times its weight of water, and pour the solution over the body twice or thrice a day, and keep it over night in coarse linen wrappers steeped in the solution. We have reason to believe that it would be a cheaper and more convenient antiseptic than ice.

We find, by the Bulletin des Sciences Medicales, for July last, that the Society of Marseilles have adjudged a medal to M. **Labarraque**, for his useful applications of the bichloride of lime to hygieine and practical medicine.

55. *Preservation of Dead Bodies by Injections of Corrosive Sublimate.*—M. **Leonard**, Professor of the Military Hospital at Lille, has succeeded completely in preserving the body of a phthisical patient, during very hot weather, by injecting it with a concentrated solution of bichloride of mercury.—*Journ. Univer. des Sciences Med. Juillet*, 1826. This antiseptic expedient is not new.

56. *Analysis of a Black Liquid, vomited in a Cancerous Affection of the Stomach.*—By J. L. **Lassaigne**. The following were ascertained to be its constituents:—

1. A great quantity of water.
2. Free lactic acid.
3. Lactate of ammonia, and lactate of soda.
4. Caseic acid.
5. Osmazome.
6. Albumen.
7. Muriates of soda and potassa, and phosphate of lime.
8. A black matter, analogous to the colouring matter of the blood in an altered state, and to which the colour of the liquid is owing.

"This analysis appears to confirm the opinion of **Breschet**, that the black colour of matter, vomited in certain diseases, is owing to an alteration in the colouring matter of the blood."—*Journ. de Chim. Med.* Sept. 1826; as quoted by the London Med. Repos.

57. *Analysis of a Liquid formed in the Gall-Bladder after death, in a case of Scirrhous Affection of the Pancreas, attended with Jaundice.*—This liquid consisted of

1. Sulphate of ammonia.
2. Albumen.
3. A fatty yellow matter, assuming a crystalline form.
4. A green matter, analogous to chlorophile.
5. Osmazome.
6. Muriate, phosphate, and sulphate of soda.
7. Carbonate and phosphate of lime.
8. Sulphur and oxide of iron.

It therefore appears, that this liquid differed from healthy human bile.—*Journ. de Chim. Med.* Oct. 1826; as quoted by the London Med. Repos.

58. *Matter, causing the yellow colour of the skin in the Icterus of new-born Infants.*—This matter has been proved by M. **Lassaigne**, to differ from bile, in being soluble in alcohol.

59. *Analysis of Bryony Root.*—M. **Dulong** of Astafort, has lately examined the root of the *Bryonia alba*, which is known to be an active poison, belonging to the order of acrids. He finds it to consist of a poisonous bitter principle, similar to *coloquintin*, or principle of colocynth, associated with abundance of starch. The bitter principle is soluble in water and alcohol, but not in ether, and has no effect on vegetable colours. In this

association of a poisonous soluble principle with starch, the Bryony root resembles the root of the jatropha manihot, from which tapioca and cassada are obtained.—*Journal de Pharmacie*, Mars 1826; as quoted by Edin. Med. and Surg. Journ.

60. *Chemical nature of the different varieties of Fecula, used as diet for the Sick.*—**Caventou** has recently made some experiments on fecula. This substance is known to be insoluble in cold water, unless when roasted at a few degrees above 212°, or previously converted into a paste with hot water; after either of which treatments, it becomes slightly soluble, and its insolubility cannot be restored. Starch, thus obtained, is considered by **Caventou**, to be the same as the *Amidin* of M. de **Saussure**.

Amidin is characterized by giving a deep blue colour with iodine. If long boiled in water, it becomes more soluble, and then strikes a purple colour with the same test. It is considered by **Caventou**, to owe its existence to the modifying influence of heat upon starch.

Caventou has arrived at the following conclusions, relative to the nature of the chief amylaceous substances used in medicine and cookery:—

Arrow-root is insoluble in cold water; but it forms with hot water a paste, which strikes a blue colour with iodine, and which may be considered as having undergone the alteration, constituting amidin. Arrow-root is, therefore, unmodified fecula.

Sago, being largely soluble in cold water, the solution becoming blue with iodine, is almost wholly amidin, and not fecula. As this substance is insoluble in its natural state, as its extraction by affusion and subsidence sufficiently shows, it must have undergone the process of roasting.

Tapioca is also amidin, almost exclusively, as it is entirely soluble in cold water.

Salep, though generally considered to be a variety of starch, is totally different. It resembles gum tragacanth; as it consists of gum and a vegetable principle, called *bassorin* by **Bucholz**.—*Ann. de Chim. et de Phys. Avril* 1826; as quoted by Edin. Med. and Surg. Journ.

61. *Acetate of Mercury.*—M. **Garot** has written a memoir on the acetate of mercury, with a view to ascertain why **Keyser**'s pills at one time act mildly, and at other times, in the most violent manner. He has ascertained that there are two mercurial acetates; a protacetate and peracetate, and appears to attribute the occasional violent operation of the pills to the presence of the latter. On the authority of M. **Robiquet**, it is stated, that a partner of **Keyser** was in the habit of preparing the acetate by dissolving red precipitate per se in acetic acid. The plan of the late M. **Vallee**, former professor of the school of pharmacy, was by double decomposition, between the protonitrate of mercury and acetate of lime.—*Archives Gen. de Med. Juillet* 1826.

62. *Expeditious Method of forming Mercurial Ointment.*—An apothecary, named M. **Dodelin**, proposes the following process for preparing double mercurial ointment:—Agitate, in a glass vessel, running mercury with fat, liquified at a temperature of 140 degrees Fahrenheit; and afterwards triturate the mixture in a heated iron mortar. M. **Dodelin** assures us, that, by this process, mercurial ointment is obtained in an hour, of a quality equal to that requiring several days of trituration upon the old plan.—*Arch. Gen. de Med. Juillet*, 1826.

63. *Poppy of the Environs of Paris.*—According to M. **Dublanc**, the extract of this plant, like opium, contains morphia, narcotin, meconic acid, and resin; but it does not contain sufficient morphia to render it an advantageous source for this vegetable salifiable base. But while it contains less morphia, it is more abundant in narcotin than opium. According to **Orfila**,

four or five grains of the extract are necessary to produce the same excitation as one grain of opium.—*Arch. Gen. de Med Aout.* 1826.

MEDICAL JURISPRUDENCE.

64. *Duration of Human Pregnancy.*—This subject has lately attracted much attention in England, in consequence of an important trial, in which two questions were deeply involved—what was the longest, and what was the shortest period of utero-gestation. In this case, seventeen medical gentlemen were examined; five of whom were of opinion, that the period of human utero-gestation was limited to about nine calendar months, from thirty-nine to forty weeks, or from 270 to 280 days.

On the other side were twelve physicians, who, although agreeing that the above was the usual time of gestation, still maintained the possibility that pregnancy might be protracted to nine and a half, ten, or eleven calendar months.—*Med. Chir. Review. July,* 1826.

This question is certainly one of great importance; as it may involve the honour and happiness of families, the legitimacy of offspring, and the succession of property. It has been agitated for hundreds of years, and yet, like many other physiological questions, still remains in an unsettled state. Nature, undoubtedly, is peculiarly tenacious of uniformity and accuracy in all her operations connected with the propagation of the species; but still is not infallible in her objects, nor invariable in the means of obtaining them.

We agree with Dr. Dewees, that, as there are many causes which may provoke the uterus to contraction a short time before it would take place spontaneously, so there may be others, which may procrastinate this event. Justice requires, that when pregnancy has exceeded the ordinary or legal term, we ought not to presume the illegitimacy of the issue, unless other circumstances warrant this conclusion. But even in admitting this, we are convinced of the truth of Dr. Beck's opinion, that most of the cases of extremely protracted pregnancy, if closely examined, would be found to bear the impress of vice or error.

65. *Infanticide.*—Dr. Bernt, of Vienna, has lately proposed a new test as to the vitality of new-born infants, which he considers as infallible.

After attending to the changes which take place in the fœtal circulation the moment the infant breathes, he says, " This hole, (the foramen ovale,) in a child which has never breathed, is exactly in the bottom of the fossa ovalis; but as soon as the child has breathed, the aperture becomes turned towards the right, in some weeks it has ascended very high, and in adult age is found to have arrived at the summit of the oval. In other words, from the moment respiration commences, the aperture of the foramen ovale begins to travel from the lower extremity of the oval hole towards the upper, proceeding from left to right, and the degree of advance it has made becomes an index of the existence and duration of the respiratory process. The same gentleman also attaches much importance to another docimasial test; namely the relative gravity of the lung. Thus, if the lung of a new-born infant, which generally weighs about an ounce and a half, sink in water, he observes how many grains acting over a pulley will just raise it to the surface: this will require about half a drachm. If the lung swim in water, he notices how much it takes to sink it; in lungs of the above mentioned weight it requires about 160 grains to sink them to the bottom. He repeats these experiments with the heart attached to the lungs, and the whole of them a sufficient number of times, to ascertain the relative proportion of these in an average way; and thus he thinks, we have a steady hydrostatic test of an inflated and fully circulating lung, as compared to that which has never been completely permeated either by blood or air. *Anderson's Quart. Journ. July*, 1826.

66. *Arsenic.*—Dr. Christison in vol. II. of the Trans. Medico-Chirurg. Soc. of Edinburgh, gives the details of two cases of examination of the contents of the stomachs of persons supposed to have been poisoned with arsenic. In these, he precipitated the arsenic from its solution by means of sulphuretted hydrogen gas: this precipitate was then cautiously introduced into a glass tube, and heated to a full red, when a distinct crust was sublimed, of a smooth bluish gray, and brilliant like polished steel externally, crystalline, sparkling, and iron gray internally, like the fracture of fine steel. This test he thinks decisive; as no other known substance can yield, with sulphuretted hydrogen, a yellow precipitate from which such a metallic crust can be sublimed. In order to establish the nature of the crust precisely, he subjected it to a test of great delicacy and facility of application. The portion of the tube containing the flux being removed, by melting and drawing it out, the crust was driven up and down by the spirit-lamp flame: at first it kept its polish and iron gray colour, but finally was converted into small detached crystals of oxide of arsenic, of a white, translucent, adamantine lustre, with triangular facets.

Where arsenic is dissolved in coloured fluids, it is difficult or impossible to obtain the true precipitates with the liquid tests. Mr. Phillips of London proposes to destroy these colours by means of ivory black: the results of his experiments are striking, and if they are to be depended on in all cases, will tend to remove much of the difficulty always connected with this intricate and delicate operation. He says, to prevent the charcoal having any effect on the nitrate of silver, when used as a test, it should be well washed with boiling distilled water on a filter, till the water gives no sign of muriate of soda.—*Anderson's Quart. Journ.*

QUARTERLY LIST
OF
AMERICAN MEDICAL PUBLICATIONS.

A Treatise on Physiology applied to Pathology. By F. J. V. Broussais, &c. &c. &c. Translated from the French, by John Bell, M. D., &c., and R. La Roche, M. D., &c. Philadelphia. H. C. Carey and I. Lea. 1826. pp. 559.

Of the translation of a work, embracing many of the elementary views of the celebrated modern reformer, it is obviously improper to speak; as one of our own number has taken a share in its preparation. It is lawful for us, however, to make known the nature, object, and merits of the original.

We cannot too strongly recommend the present work to the attention of our readers, and indeed of all those who wish to study Physiology, as it ought to be studied, in its application to the science of disease. It has but too frequently been the custom among authors on Physiology, to investigate the functions abstractedly from the agents which modify them; in a word, to study them in a state of health, and to pay little or no attention to the manner in which they may become diseased from the inordinate action of their ordinary stimuli, or how, in their turn, they become the cause of derangement in each other, throughout the body. It is to fulfil this desideratum, that M. Broussais has written the present work; and we may safely say, that he has accomplished his task in a most masterly manner, and thus established his reputation as an excellent physiologist and profound pathologist.

We are aware that such an eulogium will excite a smile in some of our professional brethren; who, totally unacquainted with the writings of Broussais, imagine he has done little else than assert, without due experience, that idiopathic fevers are cases of gastro-enteritis, and affect to treat his opinions as purely theoretical, and unsupported by clinical observations. To such physicians, the only answer we think it necessary to make, is, to advise them to study the doctrine, before they attempt to pass judgment upon it; and particularly to examine carefully the work before us, and the "Histoire des Phlegmasies Chroniques," which we hope soon to see translated into our own language: and if, after doing this, they do not find that Broussais has seen as much disease as the most experienced among them, that, in general, he has reasoned as well as they on what he did see, and that his doctrine consists in something more than the mere enunciation of the gastro-enteritic nature of fevers, and the benefit derived from the application of leeches to the epigastric region, we shall be willing to attach more weight to their criticisms than we are at present disposed to do.

But, although we feel prepared to view the doctrine of Broussais as, on the whole, the soundest, most useful, and most truly physiological of any hitherto offered, we are not disposed to admit *all* his positions on some points of pathology or therapeutics; and such we know to be the sentiment of the translators of the present volume. We intend, in our next number, presenting an analytical review of the work, which was prepared in time for the present, but was crowded out by the great quantity of matter already on hand.

A Treatise on Special and General Anatomy. By William E. Horner, M. D., Adjunct Professor of Anatomy in the University of Pennsylvania. 2 vols. 8vo.

We had procured a notice of this new Anatomy to be written for our present number; but it was omitted for want of room. We may be permitted here merely to express our satisfaction at the simple fact of our now possessing two American treatises on this science, arranged and elaborated on different principles; so as, we hope, to encourage a more liberal and extended course of study. We may, perhaps, notice it in our next.

The Druggist's Manual: Being a Price Current of Drugs, Medicines, Paints, Dye-stuffs, Glass, Patent Medicines, &c. With Latin and English Synonyms, a German, French, and Spanish Catalogue of Drugs, Tables of Specific Gravities, &c. &c. and a variety of useful matter. Compiled by direction of the Philadelphia College of Pharmacy. Philadelphia: Printed for the College. 1826.

The New York Medical and Physical Journal, for September. *In exchange.*

The American Medical Recorder, for October. *In exchange.*

The New England Journal of Medicine and Surgery, for October. *In exchange.*

The Philadelphia Journal of the Medical and Physical Sciences, for November. *In exchange.*

The Quebec Medical Journal. "Journal de Médecine," &c. for October. *In exchange.*

We are much gratified with the friendly tone and expressions of approbation with which the Editor of the Quebec Journal has honoured our humble labours: they are so flattering, and so far beyond our possible merits, that we should hesitate in taking them to ourselves, were it not for the very respectable standing which that publication has, at its outset, immediately assumed, and which it so ably and usefully maintains. Of the importance and necessity of a Medical Journal to such a wide and populous territory as Canada, any one can judge; but in the present instance, an additional and peculiar advantage is gained, from what might seem to many a disadvantage. We allude to the obligation under which the Editors lie to make large use of the French language: a language which constitutes, at present, the key to such a vast and important fund of medical knowledge on the continent of Europe.

The Carolina Journal of Medicine and Agriculture.

Boston Medical Intelligencer. Vol. IV. No. 20.

The character of this publication has recently been somewhat changed; and it has now passed into the editorial care of Dr. John G. Coffin, the able translator of a well known work of Bichat, and author of the Essay on the Disadvantages of Interments in Populous Cities. We understand that the Intelligencer has assumed a more popular character; being devoted principally to hygieine, to the discouragement of quackery, and to what Dr. Virey calls the *art of being sick.* At the same time, it is wished to be a medium of preserving scattered accounts of epidemics for the future historian. From the taste and talents of Dr. Coffin, we doubt not its success and extended usefulness.

AMERICAN EDITIONS OF FOREIGN MEDICAL WORKS.

An Inquiry concerning that disturbed state of the Vital Functions, usually denominated Constitutional Irritation. By Benjamin Travers, F. R. S. Senior Surgeon to St. Thomas's Hospital, &c. &c. New York. Published for the Author, by H. Stevenson. 1826.

THE

NORTH AMERICAN

Medical and Surgical Journal.

APRIL, 1827.

ORIGINAL COMMUNICATIONS.

ARTICLE I.—*An Account of the Yellow Fever which prevailed at Thompson's Island, in the year* 1824. By BENJAMIN TICKNOR, M. D., U. S. N.

BEFORE entering upon an account of the endemic, I shall make a few remarks respecting the medical topography of the island.

Key-West, or Thompson's Island, is situated in north latitude about twenty-four, and west longitude about eighty-one degrees. The form of the island is long and narrow; its length, which is nearly east and west, is eight or nine miles; its breadth is from one to three. The general surface is level and low; the most elevated part, which is a ridge running along the southern and eastern shore, and which consists principally of sand and shells, thrown up by the sea, rises only about five feet above the level of high-water. A large proportion of the interior of the island is occupied by lagoons, or ponds of stagnant water, which are surrounded by marshes of a greater or less extent. The beds of some of these lagoons are lower than the surface of the surrounding ocean; hence they can never be effectually drained, a measure which has been considered practicable, and by which it has been supposed the island might be rendered healthy. The water of some of these ponds is salt; of others, it is fresh. These numerous bodies of stagnant water, and the marshes by which they are surrounded, constitute a prolific and inexhaustible source of miasmata; for the former, containing a great quantity of dead animal and vegetable matter, and the latter being covered with a rank vegetation, there is always an abundant supply of materials to support the process of decomposition; which is extremely rapid where solar heat exerts its most powerful influence. It was not from this source alone, however, that noxious exhalations arose; for the whole surface of the island may be considered a great laboratory, in which they are generated in a more or less concentrated form; especially that part of it to which I shall soon particularly direct my remarks.

Besides the sources of atmospheric contamination which have been mentioned, there is another, which, though it has only an occasional existence, is, nevertheless, equally prolific when it does exist. This is an immense quantity of marine substances, both animal and vegetable, which are thrown upon the beach during the prevalence of a south or south-westerly wind. A mass of sub-marine production is thus accumulated, which extends several miles along the shore, and lies in some places to the depth of two or three feet. Within a few hours such a dense volume of most horribly offensive effluvia is sent up from this vast assemblage of corrupting materials, that it is scarcely possible to approach within a considerable distance of the beach.

Whether this kind of miasma is equally deleterious, as that which arises from marshes and stagnant water, is a question which I shall not stop to consider. I have sufficient reason, however, to regard it as one of the sources of the unhealthfulness of this island. Such are the general outlines of the medical topography of Thompson's Island; but that part of it on which Allenton stands, and which is occupied as a naval depot, deserves a more particular description.

Allenton is situated on the north-western, or leeward, part of the island; for although the trade-wind does not blow regularly here, yet the wind prevails more from the north-east than from any other quarter. Hence Allenton is exposed to a current of miasmata which the wind takes up and bears along as it sweeps over the island; and besides this, it is situated on a part of the island which is most abundantly supplied with materials for decomposition; so that it stands in the focus (if I may so speak) of all the poisonous effluvia generated on the island. The site of Allenton is the lowest and most level part of the island that is not covered by water; and its surface, being composed principally of animal and vegetable substances, is constantly in a state of decomposition, and loading the atmosphere with offensive vapours. About fifty rods back from the harbour in an easterly direction, is one of those lagoons which have been mentioned, bordered with a marsh of considerable extent. Allenton occupies the narrow space lying between this lagoon and the harbour, and extends nearly half a mile along the shore. Here is transacted, not only all the business belonging to a naval depot, but also considerable mercantile and commercial business; and here, of course, most of the cases of yellow-fever occurred.

Allenton, being deprived by its situation of the grateful influence, not only of the regular trade-wind, but also of the sea-breeze which considerably tempers the heat on the eastern side of the island, suffers as much, perhaps, from a high range of temperature during the year, as any place situated within the tropics. The average grade of heat for nine months of the year, is but little less than ninety. During this period the mercury continues nearly stationary through the whole twenty-four hours, there being no land-breeze here at night, as there usually is in tropical regions, to agitate and cool the air; which remains motionless through the day, and by the direct and reflected rays of an unclouded sun, becomes heated to an almost insupportable degree. But during the remainder of the year, viz. in the months of December, January and February, the wind occasionally shifts from a southerly to a northerly direction, and as the northerly wind generally brings with it the climate of those regions through which it passes, it frequently causes a great and sudden reduction of temperature. Such sudden vicissitudes are unfriendly to the human body in all climates; but particularly so in a climate as enervating as that of Thompson's Island. Their effects are nearly the same there as we might suppose would be produced by a sudden transition from the torrid to the frigid zone.

But whatever may be the direction of the wind, or the degree of heat, the atmosphere is always loaded with humidity, insomuch that books and other articles are soon covered with a green mould, and provisions spoil in a short time.

A great quantity of rain falls here in the course of a year; but it generally descends in heavy showers which rise suddenly, and as suddenly disperse, the sun shining forth with increased ardour. There is no good water on the island; the best, and indeed the only water fit for use, is that which falls from the clouds. When received, however, into clean reservoirs, and subjected to a cooling process, it is more free from impurities and more wholesome than spring-water usually is in low marshy situations. As showers are frequent, there is generally a sufficient supply of rain-water both for drinking and for culinary purposes.

Having now delineated the principal features in the medical topography of Thompson's Island, I shall proceed to give an account of the fatal endemic as it appeared there in 1824, and which still continues its destructive ravages.

REMOTE CAUSES.

Miasma.—From the remarks that have been made respecting the topography of the Island, it must be evident, that vegeto-animal effluvia was a principal agent in the production of the disease. It generally acted as a predisposing cause, though sometimes it appeared in the character of an exciting one; and when it did so, its force, in some instances, was so concentrated, that it seemed to paralyze the vital functions almost instantaneously, and to such a degree, that they were incapable of being re-excited by any means whatever. At Allenton, where, as has been stated, the men belonging to the public service were mostly employed, and where nearly all the cases of fever occurred, the miasmata were most concentrated and most powerful. Against a cause possessing such a subtle and active influence, no effectual resistance could be made; yet if the men could have been protected during the night, the time when, it is well known, that marsh effluvia are most active, I have no hesitation in saying, that the amount of disease and mortality would have been considerably lessened. A few remarks here, respecting the manner in which the men were lodged, will not, I conceive, be improper.

The building occupied for this purpose, is situated within a few rods of those prolific sources of miasmata which have been mentioned, namely, the pond and marsh bordering upon Allenton on the east; and its site is one of the lowest and most unhealthy, even of this the most sunken and insalubrious part of the island. Though quite low, this building is divided into an upper and lower story, by a floor seven or eight feet from the ground. The lower story, which is destitute of a floor, was used for storing boats, cordage, &c., and also for a work-shop; in the upper one, most of the men were in the habit of taking their meals, and spending all the leisure time that was allowed them during the day, and of sleeping at night. This story, or rather loft, was open both at the sides and ends; and as the weather was extremely hot at night, as well as through the day, the men would throw themselves down, after the exhausting labours of the day, as near as possible to the open sides of their apartment; where, although they had a roof over them, they were almost as much exposed, not only to a current of miasmata, but also to the dampness of the night-air, as if they had been entirely destitute of every thing that looked like affording protection. Unmindful of the danger to which they were thus exposed, and being refreshed by the nocturnal breezes which occasionally passed over them, they soon fell asleep, and remained in this situation till morning; when, as often happened, they awoke with those shudderings, and those indescribable sensations of distress, which were the too sure harbingers of an approaching conflict with a most ungovernable disease. Of all the men who slept in this loft, and were exposed in this manner, not a single individual escaped an attack of fever.

But whatever degree of activity and virulence miasmata possessed in certain situations, their deleterious influence was never manifested far from the sources whence they originated. The shores of the island were the limits within which the visible effects of miasmata were generally circumscribed. There were several vessels lying within a little distance of Allenton where several cases of the yellow fever were occurring every day, yet very few of the men composing the crews of these vessels were attacked by the disease, and in no instance, I believe, without having spent some time on shore; where they were exposed to the action of vegeto-animal effluvia in their most concentrated state.

Though none of the men, as has been observed, who were on duty here, escaped an attack of fever, yet those who were strangers to the climate, and had just arrived in the vigour of health from a northern latitude, being more susceptible to the action of the morbific agent which I am now considering, were much the greatest sufferers. Most of them were attacked soon after their arrival, and in them the disease presented itself in its most malignant character. And not only did all the men attached to the public service, some of whom, though from a northern latitude, had been long enough on the island to have become in some degree acclimated, feel the effects of this subtle poison, but also most of those who were residents there, and who had lived long in tropical climates. These were poor people, sixty or seventy in number, who had been induced to come to the island, with the prospect of obtaining there an easy livelihood. Some of these were blacks, in whom, as well as in all others of the same colour here, miasmata exerted a less fatal influence than in those of a different complexion.

Respecting the modus operandi of the aeriform products of vegeto-animal decomposition, I shall offer no remarks: for after what has been advanced by JOHNSON and others on this subject, I could not expect to say any thing that would influence present opinion; besides, it is rather my design to state facts, on which I believe all medical science to be founded, than to indulge in unprofitable speculations.

Intemperance.—This is a vice from which very few sailors are exempt, and those at Thompson's Island were peculiarly addicted to it; for they drank not only to gratify their appetites, and to enjoy the pleasure attendant on a state of intoxication, but also to guard themselves against an attack of fever.

Agreeably to a regulation of the naval service, every man was entitled to, and received, a daily allowance of half a pint of rum or whiskey; but this being considered insufficient to produce the desired effects, they would add as much to it as they could get either by buying or pilfering; and this was a common practice, until its evil effects became so apparent as to lead to the adoption of a regulation, that their supply of spirits should be reserved till evening, when they would drink the whole at once. The effects of this excessive potation were the more pernicious, in consequence of the exposed condition of the men during the night; for, throwing themselves down in a state of high excitement, with the perspiration streaming from every pore of the body, upon the floor of their open loft, where they were exposed to the refreshing but dangerous influence of the damp night-air, they soon fell into a sleep which resembled an apoplectic stupor, and so remained till morning; by which time the stimulus of the evening draught had ceased to operate, and left the body in a state of languor and debility, which greatly favoured the operation of miasmata.

This habit of ingurgitating so large a quantity of intoxicating liquor, and especially a liquor so hot and fiery as that which is usually served out to sailors, proved more destructive from the whole being taken at once, and while the body was in a state of exhaustion from the labour and heat of the day, and therefore the less able to endure a high degree of stimulation.

But it is not to this excessive use of ardent spirits, that I would restrict the term intemperance; nor was it in those only who were in the daily habit of brutalizing themselves by intoxication, that inebriating liquors produced their morbid effects. It was not a certain quantity only of rum or whiskey, which, by raising a violent commotion in the system, and causing great disorder among its functions, invited an attack of the endemic, and increased its violence and fatal tendency, but any quantity, however small, of these or any other intoxicating liquors, capable of raising an unnatural excitement in the stomach, was found evidently to favour the accession of fever, and to lessen the chance of recovery. It is unnecessary, however, to multiply remarks upon the ill effects of spirituous potation: since it is universally known, that even in temperate climates, intemperance strongly predisposes the body to febrile affections; and no one can doubt, that in a climate like that of Thompson's Island, its influence must be much greater, and that it not only induced a predisposition to the endemic, but not unfrequently became its immediate exciting cause.

Atmospheric vicissitudes.—The only changes in the state of the atmosphere which could be recognized as exerting a morbid influence on the body, were, first, the diurnal reduction of its temperature from the solar heat being withdrawn; second, an occasional reduction of temperature, caused by a change in the direction of the wind.

With regard to the first, though the heat was but little abated by the sun withdrawing his rays, (the mercury being seldom more than seven or eight degrees lower during the night than at mid-day,) yet slight as this change was, its morbid influence upon bodies exhausted by ten or twelve hours hard labour under a burning sun, was very apparent. The effects also of this change of temperature were the greater, in my opinion, from the general grade of temperature being very high; for I apprehend it is in accordance with a law of the human constitution, that the higher the atmosphere to which the body has been for some time exposed, is heated, the greater is the effect produced by a slight reduction of temperature. Thus, the change from ninety to eighty degrees produces much more sensible effects than the same change from sixty to fifty. Allured by the agreeable coolness of the night air, (for though the mercury fell but little during the night, yet this slight change, and the condensation of vapour which accompanied it, rendered the night-air cool and refreshing to the exhausted frame,) the men inconsiderately passed their night in situations admitting of the freest circulation of air, and consequently the most exposed to nocturnal damps. The consequence was, that, instead of awaking in the morning with renovated vigour, and the alacrity of health, they moved with difficulty from their resting-places, their limbs being stiff and benumbed, and complained of sickness and oppression at the stomach. This frequently proved to be the commencement of the fever in its most malignant form; and when it was not, such a degree of internal organic derangement was produced, as required but slight exciting causes to develop all the phenomena of the disease.

Respecting that alteration of temperature which was occasioned by a change in the wind from a southerly to a northerly direction, I shall only observe, that, as it rarely occurred till late in the autumn, when the yellow-fever became divested, in a considerable degree, of its malignant character, it is rather to be considered as a cause of the intermittent fever which then became prevalent, than of the disease now under consideration.

Heat.—From what has been already said, the agency of atmospheric heat as a cause of the disease, must be sufficiently evident. It is therefore unnecessary to say any thing further respecting it. It may not be amiss to observe, however, that the effects of the high temperature were rather those of a predisposing, than of an exciting or immediate cause; though, in some cases, an exposure of a few hours to the solar rays was sufficient to produce an immediate attack of the disease.

Fatigue.—It unfortunately happened, that circumstances did not often admit of that attention being paid to the enervating influence of the climate in assigning to the men their several duties, which their situation required. Indeed, the same amount of labour was exacted from them, in a climate so debilitating that the slightest exertion was painful and fatiguing, as in one beyond the influence of a tropical sun. Hence a degree of fatigue and exhaustion was produced, which not only prepared the body for an attack of the disease, but rendered it more rapid in its course and more apt to terminate unfavourably. It is not intended that the foregoing remarks should reflect censure upon the officer under whose immediate command the island was at the time alluded to; for circumstances frequently compelled him to impose heavier tasks on the men, than he would have done if he could have followed the dictates of his own judgment and inclination.

Unwholesome Food.—It is agreeable to the observation and experience of those who have been best acquainted with tropical climates, that a diet, consisting principally of animal food, and especially of hard salted meats, is there peculiarly apt to cause gastric and hepatic derangement, and to predispose to febrile disorders of a dangerous character. This was one of the causes, which, though it could not, by any means, be considered capable of exerting any considerable agency in the production of a disease which owed its origin principally, if not altogether, to vegeto-animal effluvia, gave, notwithstanding, to the endemic of Thompson's Island, a greater degree of malignity than it would otherwise have exhibited. The food provided for the men consisted almost wholly of salted beef and pork; sea-bread of a coarse, bad quality; and of a few dry vegetables. To show that it tended to aggravate the disease, and to render recovery both slow and difficult, it will be sufficient to state the fact, that in several the scurvy manifested itself by unequivocal symptoms.

Such were the causes, to whose agency the origin and continuance of this fatal malady were principally to be attributed. There was, indeed, a considerable number of others; but they were so unsteady and contingent in their operation, and, besides, so trifling, compared with those which have been mentioned, that they are not deserving of particular notice.

SYMPTOMS.

In describing the symptoms of the disease, I shall consider it as consisting of four periods or stages—the cold stage, or stage of torpor; the stage of re-action, or excitement; the period of remission; and, finally, the period succeeding that of remission, and terminating either in death or recovery.

First. *The cold stage, or stage of torpor.*—The first symptoms of the disease were generally rigors, more or less severe, accompanied with pain in the head, back, and limbs. The pain in the head was most commonly seated over the eyes, and attended with a dull, heavy feeling, and a sense of fulness and stricture, as if a band were bound tight around the head. Sometimes, instead of acute local pains, the patient complained of a general uneasiness, a malaise, as the French call it, which was more intolerable than the most severe pain, when confined to a particular part. Nausea and vomiting were among the earliest and most troublesome symptoms of the disease; indeed, they were sometimes present several days before the disease made its formal attack. The matter ejected appeared to consist principally of vitiated bile; sometimes exhibiting the colour, but not the other healthy properties, of that fluid; but most generally it was either pale, watery, and but slightly bitter, or greenish, frothy, and of an acid taste. The vomiting recurred at short intervals, and the quantity of matter thrown up was frequently very great. This was one of the most constant and obstinate symptoms of the disease; for scarcely a case occurred, in which it did not sooner or later appear, and, for some time at least, resist all the means that could be employed to check it. When it appeared first at an advanced period of the disease, it was generally more to be dreaded than when it came on earlier, because it was more apt to terminate in the black vomit. Cardialgia, or a distressing sense of burning in the stomach, was sometimes present during the whole of this stage of the complaint, but more commonly it did not take place till it was about to terminate, or till re-action had actually come on. Oppression and soreness in the epigastrium, were complained of from the beginning in every case; and these symptoms were often accompanied with considerable præcordial distention. The tongue, during this stage, was of a pale or leaden colour, and its upper surface was covered with a viscid white or yellowish coat. The bowels were generally constipated, not only at this, but at every subsequent period of the disease, evacuations seldom taking place without the use of laxatives; and when thus procured, the appearance of the intestinal contents was always unnatural. Sometimes they resembled tar, both in colour and consistence, and not unfrequently possessed such a degree of acrimony as to cause extensive excoriation. The pulse was always in this stage exceedingly weak, small and frequent; and in many cases there was an undulating, vibratory or vermicular motion, rather than a regular pulsation. Delirium sometimes manifested itself soon after the attacks, though for the most part it did not come on till re-action had become well established. The countenance was expressive of extreme anxiety and distress, especially where the attack was severe. It would be impossible to convey an idea of this symptom in words; but whoever has seen it once, will never fail to recognize one of the most striking features of this terrible malady. Until re-action took place, the surface of the body felt cold; the skin was of a yellowish-livid colour, and bedewed with a cold, viscid sweat. Great languor and prostration were invariably attendant on this period of the disease; and so suddenly was the muscular energy paralyzed in some cases, that the patient would fall to the ground, and remain for a considerable time entirely helpless. Though there was a sense of chilliness during the whole of this stage, yet it was most considerable in the early part of it, and was then attended with occasional rigors; but it rarely happened that the rigors were severe, or of long duration.

Such were the symptoms which usually characterized what I have termed the first period of the disease; which, in several instances, constituted the whole of its course; for the shock which the system had received was sometimes so great, its energies were so paralyzed, and its vital organs so oppressed, that re-action could not take place. In these cases, the symptoms which have been detailed, continued gradually to increase, till the vital powers were exhausted, and the patient was carried off with black vomit, universal hæmorrhage, or general convulsions. It was comparatively rare, however, for the disease to run its course thus rapidly: in most cases, the cold stage, after continuing from one to twelve hours, terminated, and was succeeded by that of re-action, which constituted the second period of the disease.

Second. *The stage of re-action, or excitement.*—A considerable change now took place in the train of symptoms, some new ones making their appearance, while some which had been present during the preceding stage ceased, and others became greatly aggravated. The epigastrium continued still to be the principal seat of the disease. If the cardialgia and vomiting had not been present before, they never failed to come on now; and if they had, they became more distressing as the languid energies of the system revived. But, at the same time, as the blood was impelled by the increasing power of the heart to the smaller vessels, from which it had receded during the period of torpor, the patient experienced considerable relief from the epigastric oppression. A corresponding change took place in the pulse: from being small, feeble, and oppressed, it became more full, hard, and tense. Its principal characteristics, during this period, were hardness and tension; for, however violent the febrile orgasm might be, the pulse, though hard and tense, was still small and contracted. The disorder in the sensorial functions was now considerably augmented; if delirium had not come on before, it rarely failed to occur at this time; and if it had, the increased determination to the head rendered it more violent. The pain over the eyes, together with the sense of stricture, became excruciating; the face was flushed and tumid, and the eyes were red, protuberant, and watery. The tongue appeared preternaturally red and vascular, and its upper surface was covered with a dry, brownish crust, in most cases where the gastric affection was severe; but in others nothing was observable, except a moist, white, or yellowish, mucous incrustation. The renal secretion became now of a deep red or yellow colour. In some cases, the yellow suffusion of the skin and eyes made its appearance at this stage of the disease; but most frequently, as the circulation returned to the cutaneous vessels, the skin regained its natural colour, and at length became preternaturally florid. At the same time, its temperature rose considerably above the healthy grade, and the moisture with which, during the preceding stage, it had been bedewed, was now dissipated or absorbed, and left it dry and husky. During the stage of re-action, both the local pains and the general distress were considerably augmented; to such a degree, indeed, in some cases, where the morbid sensibilities of the system were exquisitely acute, that the patient's sufferings became almost insupportable. Watchfulness was, of course, a constant attendant upon this state of misery, and, if possible, rendered it more intolerable. Thirst was also a distressing symptom, which nothing could allay; for such was the irritability of the stomach, that every liquid received into it was instantaneously rejected.

Such were the important symptoms attendant upon the second stage of the disease; which usually continued about twenty-four hours, and was then succeeded by a remission of the most urgent symptoms; though in a few instances the re-action was so violent, that the powers of the system were soon exhausted, and, instead of a remission, it was followed by immediate dissolution.

Third. *The period of remission.*—This was characterized principally by an abatement of all the local and general pains, and especially of those referable to the head and stomach; by the pulse becoming softer and fuller, and at the same time less frequent; and by a reduction of the cutaneous temperature to its natural standard. The remission was more or less complete, according to the violence of the preceding stage, and according to the early or late employment of the proper curative means. Sometimes the patient was able to leave his bed, and walk about, and complained only of debility; but most generally he continued, during this period, in a low, languid state, and equally averse both from mental and bodily exertion. In every case, however complete the remission may have been, there was still remaining some degree of gastric irritability, and of tenderness and oppression in the epigastrium; which indicated that the disease still retained some degree of dominion over the epigastric viscera. It happened, in a few instances, where the attack was not very severe, and where the proper remedies had been early and diligently employed, that the remission was so complete as to constitute a crisis, and thus the farther progress of the disease was suddenly and entirely arrested. But the general course of the disease was different; and whether the issue were finally fortunate, or otherwise, the remission commonly terminated in about twelve hours, and was succeeded by those symptoms which marked its fourth and last period.

Fourth. *The period succeeding that of remission, and terminating either in recovery or death.*—This stage usually commenced with the symptoms of re-action, which varied both in severity and duration, according as the system had been more or less prostrated by the previous ravages of the disease. In most cases, however, whether the event were fortunate or unfortunate, the struggles of the system were less violent than during the preceding stage of excitement. A favourable tendency was, therefore, indicated, not so much by the efforts of re-action being less violent than during the former re-active stage, as by those symptoms which gave evidence that the disease was losing its influence over those important organs, in which, as I have more than once observed, it seemed to be principally seated. Hence, when the vomiting and cardialgia were less urgent, indicating a less degree of gastric irritability; when the epigastric tenderness and oppression were less; when the cerebral pain and disorder, as well as the general distress, were more tolerable; and when the alvine discharges exhibited a more natural appearance than during the preceding orgasm, the prognosis was not only favourable, but in general the morbid phenomena quickly disappeared, and did not again return. Sometimes, however, the symptoms of re-action were renewed a second, and even a third time; but where recovery eventually took place, they became less severe at every repetition, and the intervening period of remission became more perfect and of longer duration. In the early part of the period now under consideration, the question of life or death was most commonly decided; for convalescence usually commenced with the diminished violence of the symptoms attending the second stage of re-action, or with the beginning of the fourth period; and though the febrile torch was once or twice more re-kindled in some instances, still convalescence continued to advance.

But the disease, unhappily, too often pursued a different course during the period which I am now considering. The symptoms of re-action, with which this stage usually commenced, were, indeed, frequently mild in these cases; but this was owing to a failure of the vital powers, and not to any check having been given to the progress of the disease. Though the efforts of the system were less violent than they had been before (the powers of nature were enfeebled by ineffectual struggles against the disease, yet the patient's sufferings were now considerably augmented. The gastric irritability was greater, and consequently the vomiting became more incessant, and the burning more distressing; the oppression and tenderness in the epigastrium were increased; the tongue became dry, if it had not been so before, and its coat changed from a yellowish to a dark brown; the mental disorder became more unmanageable; the countenance assumed a dark lurid appearance; the pulse was less tense and hard, but more frequent and vibrating; the anxiety and jactitation were increased; and though the debility was great, yet the patient's struggles were so violent, that it required the united force of several men to restrain them. It sometimes happened that this state, after continuing from twenty-four to thirty-six hours, or upwards, was followed by a partial remission. This remission continued but for a short time, and was succeeded by another and last effort of nature; for, if thus prolonged, the conflict soon exhausted the feeble remains of vital energy, and the symptoms which announced the immediate approach of dissolution, now made their appearance. But in much the greater number of cases that ended fatally, a second remission never occurred: the feeble efforts with which the last stage of the disease commenced, continued until disorganization took place in the stomach, or the vital functions were overpowered. The train of fatal symptoms now made their appearance. Of these the most essential were, the insensibility of the patient to his situation, as manifested by his saying that he felt very well, when he was in the greatest danger, while at the same time there was no other evidence of mental disorder; a dull, heavy, glassy eye; preternatural slowness of the pulse; coldness, and a dusky-livid hue of the skin; sudden return and voracity of the appetite; singultus; black vomit; and hæmorrhage. Yellowness of the skin and eyes, though generally present in the last fatal stage, was an unfavourable, but by no means a fatal symptom, as it also made its appearance in several cases that eventually did well. It usually appeared about the close of the third day, and was first observed as a faint tinge in the sclerotica, or on the forehead, neck, or breast. From these parts it quickly diffused itself over the whole body, and from a faint suffusion, it became a deep orange colour, especially on the anterior part of the thorax and abdomen. Of those symptoms which have been enumerated as fatal, some were present more frequently than others. These were the uniformly livid appearance of the skin, or the yellowish-livid colour, interspersed with spots of a darker hue; singultus; black vomit; and hæmorrhage. None of these was fatal in every case, except the last, and fortunately that was of rare occurrence. Two or three recovered in whom the hickup had been almost a constant symptom for two or three days; and about the same number in whom the black vomit had commenced. This latter symptom was one of the most constant precursors of dissolution. It usually came on about the third or fourth day of the disease, and continued till life was extinguished, which commonly happened on the fourth or fifth day from the attack. A great degree of gastric irritability generally preceded it, and always indicated great danger; but in a few instances, the black vomit suddenly came on, and carried off the patient, where there had been but little disturbance of the stomach, and where, moreover, there had been no particular indication of danger. The matter thrown up was of two kinds: one was a black, glistening, flaky substance, swimming in a thin, watery fluid; the other, of which astonishing quantities were sometimes ejected, presented the well-known coffee-ground appearances. Both these kinds of matter were sometimes thrown up with but little effort; but, in general, the exertions and agony of the patient were extreme. The same kind of matter was also often discharged from the bowels. It has been observed, that hæmorrhage was inevitably a fatal symptom; but it was not every kind and degree of hæmorrhage that was so. There was sometimes a slight discharge of blood from the nose, and also from the urethra, which, when not accompanied with other symptoms which indicated danger, were by no means alarming. But the hæmorrhage to which I allude, was that which resulted from an atonic or dissolved state of the solids, and in which the blood issued from almost every aperture of the body at the same time, as the mouth, nose, urethra, anus, and also from blistered surfaces. The blood in these cases was of a dark, grumous appearance, and showed but little disposition to coagulate.

The march of the disease, from the accession of the fatal symptoms which have just been enumerated, was usually very rapid, and the sufferings of the patient were often indescribably severe. The fatal termination generally took place on the fourth or fifth day of the disease; and, if a general conclusion may be drawn from the few examinations detailed below, was rather the consequence of disorganization of the stomach, than of a general prostration of the vital functions.

APPEARANCES AFTER DEATH.

Though the number of post-mortem examinations which time and circumstances permitted me to make was small, being only three; yet, as these, few as they were, may serve in some degree to elucidate the pathology of the disease, and the modus operandi of its causes, I shall be excused for inserting some account of the cases and of the subsequent appearances on dissection.

Case 1.—In this the disease presented itself in a character, which, in some respects, was uncommon. The patient was attacked in the usual manner, and, after remaining for several hours in a state of torpor, reaction came on; but it never rose high. The stomach continued free from irritation during the whole progress of the disease, and the patient complained of no pain or uneasiness except a slight sense of oppression in the præcordia. The pulse from first to last was soft, full, frequent, and undulating. He died on the seventh day of the disease, without either the hickup, black vomit, or hæmorrhage; and within an hour after death the body was examined.

On laying open the abdomen, the omentum was found to be so highly injected with blood, especially the omentum minus, that it resembled a red net-work spread over the intestines. Equally strong were the marks of congestion in the peritoneum lining the posterior parietes of the abdomen, and especially in the right hypochondrium and pelvis. The membrane here was considerably thickened, and of a dusky red colour. The peritoneal coat of the stomach, particularly at its upper extremity, was highly engorged with blood; and the same coat of the duodenum, between the pylorus and ductus communis, was in a similar condition. The internal surface of the stomach and intestines presented no morbid appearance. The liver was of unusual size, and its organization was considerably changed from a state of health. When cut into, or torn asunder, its colour was found to be considerably darker than natural, nearly resembling that of venous blood; and its texture was firm and granular. These morbid appearances were most conspicuous in the posterior part of the large lobe, near the transverse fissure. The gall-bladder was not more than half its usual size, and contained a small quantity of a dark brown matter, a part of which was in a semi-fluid state, and the rest consisted of small granuli, which disappeared on being subjected to a slight degree of friction. The intestines contained a considerable quantity of this matter, which became darker the lower it descended. The spleen was enlarged, and so altered in its structure, that it resembled, both in colour and consistence, a dark, venous coagulum. The bladder was distended with urine of a deep yellow colour, notwithstanding there had been no complaint of difficulty in micturition at any period of the disease. The peritoneal covering of the bladder exhibited a high degree of inflammatory congestion; but the internal surface showed no marks of disease. All the larger venous trunks in the abdomen were distended with a black, semi-fluid blood.

Such were the morbid appearances which the abdominal viscera presented; and as there was no evidence of the disease having exerted any particular force upon other organs, the examination was not carried beyond the limits of the abdomen.

Case 2.—In this, the disease appeared at first in its most formidable character, and preserved its threatening aspect for four or five days; at the expiration of which time, a favourable change took place, and very soon the patient was evidently convalescent. During the period above mentioned, the symptoms depending on gastric irritability, were particularly urgent, especially hickup and cardialgia. Vomiting recurred less frequently than in some other cases; but it was attended with violent and exhausting efforts. The black vomit never made its appearance. On the second day of his convalescence, this patient, by imprudent exposure, brought on a relapse, which in two days terminated his existence. The symptoms during these two days were, with the exception of black vomit, the same as those which most commonly attended the last stage of the disease when it terminated fatally, and having been already described, need not be here repeated. An examination was made within three hours after death, and disclosed the following appearances.

The omentum presented the same marks of vascular turgescence as in the preceding case. On removing the stomach and intestines, a very firm adhesion was found to have taken place between the duodenum and pancreas. The stomach was the organ on which the force of the disease seemed to have been principally concentrated. Its external surface presented marks of congestion, though not in a very great degree; but the interior exhibited the ravages of disease in a most striking manner. On laying open this viscus, it was found to contain at least a pound of the matter of black vomit, a layer of which adhered closely to its inner surface. The texture of the mucous tissue was so entirely destroyed, that it resembled a layer of bloody mucus, rather than an organized membrane; and the whole could be easily scraped off with a knife. The vessels of the muscular coat were highly turgid, but its texture appeared not to have undergone any change. The greatest degree of vascularity and congestion was observed in the vicinity of the pylorus, in consequence of which the size of this orifice was considerably diminished. The inner surface of the intestines presented nearly the same appearances as that of the stomach, and they contained a large quantity of the same black matter; but here it had lost its fluidity, and acquired the consistence of an extract. In the lower part of the ileum this matter had accumulated in such quantity, as to render this part of the intestinal tube impervious. The liver was of its natural size, and no marks of internal structural derangement appeared. The gall-bladder contained about half an ounce of a substance of the consistence, and nearly of the colour, of pitch. A considerable quantity of this depraved hepatic secretion was found through the whole course of the small intestines, and mixed with the black matter already described. The parietes of the gall-bladder had acquired an unnatural thickness and density.

These were all the morbid appearances discoverable in the abdomen; which, owing to a want of time, and to the circumstances mentioned in the preceding case, was the only cavity that was examined.

Case 3.—The course of the disease in this patient so nearly resembled that which was last described, that I shall only enumerate the symptoms in which the two cases differed. These were the black vomit and convulsions. The former came on about two days before death; but it continued only a few hours, and the quantity of matter thrown up was small. After the black vomiting ceased, he was seized with general spasms, so violent, that several men were required to keep him in bed. They recurred at short intervals, till a few hours before death, when they ceased, and he sunk into a quiet, insensible state, which continued till the lamp of life was extinguished. During the continuance of the spasms, the patient manifested an hydrophobic aversion from liquids; the least attempt to swallow a fluid of any kind, even at a moment of the most perfect tranquillity, threw the whole frame into the most violent convulsions, and produced symptoms of the most furious canine rage. As these spasms subsided, the body became suffused with a dusky-yellowish tinge, which was here and there interspersed with spots of a dark purple hue.

After death, time was not allowed for decomposition to take place, to any considerable degree, before an examination was made. The cavity of the abdomen contained a large quantity of yellowish serum, possessing such a degree of acrimony as almost to excoriate the hand. The omentum was nearly destroyed, there being only a shred of it remaining, and that was in a corroded and semi-putrid state. The stomach contained nearly a pound and a half of the same kind of black matter which had been vomited two days before; the texture of its internal coat was destroyed, so that the whole could be easily scraped off; the muscular coat was in a similar state in some places, and where the texture remained uninjured, there were marks of a great degree of vascular engorgement. The inner surface of the intestines presented the same appearances, though in a less degree, than the stomach; and they also contained a large quantity of the same kind of black matter. There was no appearance of bile, either in the intestines or ductus communis, the cause of which will soon appear. The liver was considerably increased in volume, and its texture was more firm, dense, and granular, than natural. This was particularly observable in the great lobe. The gall-bladder was transformed into a semi-transparent, yellowish, gelatinous mass, its cavity being almost wholly obliterated, and its parietes having become nearly half an inch thick. In the small cavity that remained, was found a substance of a conical shape, weighing about two drams, of the consistence of cheese, and of an olive or chocolate colour. The apex of this body was lodged in the neck of the gall-bladder, and so completely filled it as to render it wholly impervious. The lining tissue of the cystic cavity was unnaturally vascular, and of a dark colour. The spleen was nearly three times its natural size; but its structure seemed to have undergone no change. The bladder contained about two pounds of straw-coloured urine, and, both on its external and internal surfaces, exhibited marks of vascular turgescence. The peritoneum lining the posterior parietes of the abdomen, was likewise in a state of congestion. Several of the mesenteric glands were a good deal enlarged.

For reasons which have been mentioned, the examination in this case, as in the others, was confined to the viscera of the abdomen; and the morbid appearances which presented themselves here, are sufficient, in my opinion, to account for all the phenomena of the disease. The conclusions deducible from the preceding examinations, respecting the pathology of the disease, and the modus operandi of its causes, are so obvious, that it would be a waste of time to attempt to present them in a clearer light. Without pretending, therefore, to interpret the language of facts, which, I believe, have been correctly stated, and which speak so intelligibly as not to be easily misunderstood, I shall proceed to detail the plan of *Treatment.*

(TO BE CONTINUED.)

ARTICLE II.—*Staphyloraphe, or Palate-Suture, successfully performed.* By A. H. STEVENS, M. D. Professor of Surgery in the College of Physicians and Surgeons, New York.

MR. THOMAS PEARSALL, aged 25 years, of Greene county, New York, applied to me in September, 1826, for advice respecting a machine he wished to have fitted for a congenital division of the palate.

The division extended from about the anterior part of the palatine bones directly backwards, in the median line, through the velum pendulum palati and uvula. The retraction of the parts left an opening like an inverted V, with a rounded top, or, perhaps, more like the Greek letter Ω; but in the space between the palatine bones, the soft parts projected a little on each side, towards the median line.

I proposed to him an operation for uniting the divided parts, which appeared to be rather separated than wanting. He assented to this, and having, by my advice, arranged his affairs, and provided himself with a person to attend to his wants, he agreed not to speak, or swallow any thing whatsoever, for four days. I performed the operation in the following manner. The patient being seated near a window, and his head thrown back, and supported by an assistant standing behind, I interposed a handkerchief, tightly rolled up, between the molar teeth of the right side, and depressing the tongue with the left hand, introduced with the right hand a curved needle, armed with a thread, passed through an opening near its point. The head of the needle formed a small screw, and was received into a straight cylinder of iron, furnished with a female screw for the purpose. The needle was passed through the lower part of the velum pendulum, opposite the base of the uvula, and on the left side, about one-sixth of an inch from the edge. The shaft was now unscrewed, and the needle brought out. The two ends of the thread were then held back at the angle of the mouth, and two other ligatures were introduced in a similar manner, and then also on the opposite side. With a hawk's-bill forceps, I now seized the anterior part of the divided palate, and inserting a cataract knife about one line anterior to the division, paired off a thin slice of the membrane on each side. One end of each of the ligatures was next tied to one end of the corresponding ligature on the opposite side, and the knot was then drawn through, and divided. The lower ligature was then drawn with a surgeon's knot and a single knot upon it; next, the middle, and, lastly, the upper one; and the ends of each cut closely.

The operation lasted nearly one hour, time being given, in the intervals of introducing the threads, for the patient to rest, and recover from the efforts to vomit, which were occasioned by them, and also for the bleeding to cease. The patient, by request, went to bed to prevent hunger, and did not speak or swallow any thing for four days, only wetting his mouth with cold water. At the expiration of the fourth day, I removed the threads, and found the parts perfectly united. On the morning of the fifth day, when I visited him, I found he had already taken a bowl of rye mush and milk; no separation of the parts had taken place. An astringent gargle was prescribed. In the afternoon, he ate several pies, and began to speak freely, but not with much improvement in his articulation. Supposing it might proceed from the division of the uvula, the parts of which hung like a swallow's tail from the end of the velum pendulum, I removed one of them. The inflammation soon subsided, and on the tenth day, he came to take leave, being about to return home. The parts were entirely united, and the inflammation scarcely perceptible. The voice was materially improved, but far from being perfect. He felt that the air did not go so much up into his nose as before the operation, or on the first days after it; and that the palate was not so tightly stretched across his mouth as before. Indeed, it was evidently getting further back than it was at first, in consequence of its yielding.

This young man was operated upon in presence of Dr. E. G. LUDLOW, of this city, and was visited in the progress of his case by Dr. HODGE, of Philadelphia, and Dr. KISSAM, of this city. I am not aware, that this operation has been attempted before in this country; the author of it is Mr. ROUX, of Paris; he first peformed it upon a Mr. Stephens, a medical gentleman, of Canada. Mr. R. states, that the speech was corrected as soon as the ligatures were applied. It was not so in Mr. Pearsall's case. Mr. R. does not enter into the particular mode of tying the ligatures. Mr. ALCOCK, of London, has also performed the operation, but did not succeed in effecting union on the first trial, except at the lower part of the soft palate; and was obliged to repeat the operation five or six times, with threads and with needles, owing, as I conceive, to his applying a single, instead of a surgeon's knot, and to his not preventing the patient from speaking or swallowing until union had taken place. Mr. A. states, that the reason patients do not receive the perfect use of speech, immediately after the union of the parts, is, that they require to be taught to place the tongue against the roots of the front teeth, in making such sounds as *c*, soft, *s*, and *th*, and by diligent attention to attain the pronunciation of the different words. I regret that my patient left me before I could test the value of these directions. I apprehend, however, that it is necessary the velum pendulum palati should hang somewhat loosely across the fauces, in order to close the opening of the posterior nares, in speaking. I therefore infer, that Mr. Pearsall will ultimately acquire a perfect power of enunciation.

ARTICLE III.—*On Hæmorrhages.* By D. FRANCIS CONDIE, M. D.

APPLICABLE, from its etymology, to every discharge of blood from the vessels destined to contain and circulate the latter, whatever may be its cause, or the particular part of the system in which it takes place, it must be evident, that, with this latitude of meaning, the term hæmorrhage would comprise numerous diseases, differing from each other in many important particulars.

Of the various morbid discharges of blood to which the human body is liable, some are the result of an actual læsion of the vessels from which the blood is effused, while others take place spontaneously, or without the precedence of any very manifest injury of a part to which their production can be attributed. The first of these have been divided into traumatic and symptomatic hæmorrhages; and the second, to which STAHL gave the very appropriate appellation of *active* hæmorrhages, are now very generally denominated spontaneous, or idiopathic. Traumatic hæmorrhages are, of course, such as result from an accidental wound or rupture of the blood vessels, produced, most commonly, by external violence. With respect to symptomatic hæmorrhages, they are, invariably, the result of some preceding affection, such as ulceration, cancer, gangrene, &c. It is the remaining class of spontaneous, or idiopathic hæmorrhages, to which, in the present essay, we propose exclusively to confine our remarks.

The vessels of every description, in which the blood circulates in our system, present this remarkable phenomenon, that opening upon every surface, either to receive the fluids absorbed, or to give discharge to the product of various secretions, they never allow, so long as the different organs continue in a state of perfect health, the escape of their contents, if we except, perhaps, the sanguineous discharge which takes place in the act of menstruation; but, what is not true in reference to a state of health, we frequently find to occur, when certain morbid conditions in the vessels of a part are present, when from the same surfaces is poured out blood, which in their healthy state furnished only mucus, serum, or the fluid of perspiration; and this, as we shall attempt to prove hereafter, without any destruction of the integrity of the vessels, or any perceptible læsion, by which the production of the hæmorrhage can be explained.

These fluxes of blood, from the frequency of their occurrence, and their too often fatal character, constitute a class of diseases, the pathology of which becomes a subject of the first importance to every member of the profession. Notwithstanding, however, the interesting practical results to be anticipated from an investigation of the actual condition of the blood vessels, upon which the production of spontaneous hæmorrhages depends, yet by the physicians of our own country, as well as those of Great Britain, this subject has, for a length of time, been almost totally neglected, and, as a necessary consequence, we discover no unanimity of opinion to exist, as to the nature or causes of these diseases; on the contrary, in relation to these points, individuals of equal experience and authority, forming their conclusions from partial observation, and a few imperfectly established facts, are found to maintain, not merely discordant, but absolutely opposing doctrines. This circumstance is rendered the more surprising, when we turn our attention to the continent of Europe, and find, that, by the profession there, the principal points in relation to the class of diseases under consideration—the phenomena by which they are accompanied during the life of the patient, and the appearances left by them after death in the organs which had been their seat, have been made the subjects of the closest study, and the most patient and minute examination. In this investigation, the physicians of France have undoubtedly the precedence; and, as the result of their labours, the world has been favoured with numerous valuable treatises, in which the causes and nature of spontaneous hæmorrhages have been placed in an entirely new light, and their pathology rendered the basis of a more rational and successful practice. To the publications just referred to, as yet but little known in this country, we shall be indebted for many of the facts and arguments contained in this essay.

Of all the elementary tissues which enter into the composition of the human system, the mucous is that in which hæmorrhages most frequently occur; and this is no doubt to be explained from the fact, that the mucous tissue, for the most part highly vascular, is more particularly exposed to the influence of irritating causes, whether exterior agents, atmospherical vicissitudes, or irritating substances, inhaled into the lungs, taken into the stomach, or otherwise introduced into the system. Let this be as it may, epistaxis, hæmoptysis, hæmatemesis, &c. are the species of hæmorrhage of by far the most frequent occurrence, all of which are produced from mucous surfaces. But, although the mucous tissue must be admitted to be the one, in which spontaneous hæmorrhages are the most frequently seated, yet other tissues are by no means exempt from their occurrence; thus, it is not rare to discover effusions of blood in the cavity of the pleura, subsequent to certain inflammations of the thorax; and the same circumstance has been observed in the pericardium, in the cavity of the peritoneum, and in the ventricles of the brain, as a consequence of inflammations affecting these parts. Bordeu and others have cited instances, also, of spontaneous hæmorrhages of the cellular tissue; and examples are not wanting, to prove that even the surface of the body may be the occasional seat of these effusions of blood.

Spontaneous hæmorrhages are by no means of the same degree of frequency at every age of life. They are, in general, more common, and the discharge of blood more abundant, towards that period when the growth of the body is upon the point of finishing, than at any other age; they occur much less frequently during manhood, and are, for the most part, rare in old persons; while, during the first periods of infancy, they have scarcely ever been observed.

The two sexes are not both, equally, exposed to their occurrence; the female, who, in the healthy condition of her system, is subject to a periodical sanguineous discharge from the uterus, is, according to the report of many writers, more exposed to every species of hæmorrhage than the male, but particularly to those which may be considered as, in some respects, of an irregular character.

Hæmorrhages from particular organs, also, are more common at certain periods of life than at others. It is a truth, well known to the physiologist, that, during the first years of man's existence, the principal efforts of nature appear to be directed towards the head, in order to develop first the highly important organs which appertain to this portion of the body. This continued action, and permanent excitement, determine to these parts a greater flow of the circulating fluids, than in after life; and hence, hæmorrhages from the mucous membrane of the nose are of most common occurrence until towards the age of puberty; after this period, the impetus and determination of the blood are principally towards the thoracic organs; and, consequently, hæmorrhages from the throat and the lungs are most frequent during youth, and until about thirty or thirty-five years of age; after which period, "the irritability of the abdominal viscera predominating," hæmorrhages from the stomach and bowels, as well as from the bladder and uterus, are of more common occurrence.

The symptoms of the different spontaneous hæmorrhages differ, from a number of particular circumstances, from the nature of the parts in which they take place, from the effused blood finding a ready outlet from the system, or being collected in the substance of an organ, or retained in some one of the cavities, &c. It is those hæmorrhages, however, in which the blood is discharged externally, to which, on the present occasion, our attention will be more particularly directed. In most of these, the blood has to pass over a greater or less extent of surface, previously to its passage out of the body; which circumstance, together with the interference of the blood, after its escape from the vessels, with the free performance of the functions of the organ in which the hæmorrhage has taken place, should always be taken into account in appreciating the symptoms of these diseases.

Most commonly, preceding and accompanying the discharge of blood, the patient experiences at the part in which the effusion occurs, as well as in those over which the blood passes in its exit from the body, a feeling of uneasiness, which differs in degree in almost every case. There are, in general, obscure and wandering pains in the neighbourhood of the affected organ, with a sense of weight, tension, tickling, or pricking, and more or less of heat. Hæmorrhages from the lungs are, also, usually preceded by a saltish taste in the fauces, a cough, and, sometimes, a wheezing and rattling in the trachea; when from the stomach, nausea and vomiting both precede and accompany the discharge. In regard to the general symptoms of spontaneous hæmorrhages, they may be attended with increased heat of the surface—flushed face—a full, hard, and rapid pulse, and the other phenomena of acute fever; or, occurring in relaxed or debilitated habits, all symptoms of general excitement may be absent.

In the majority of cases, the loss of blood produces a degree of weakness, particularly in the arterial and muscular systems, proportionate to the quantity discharged, to the nature and importance of the organ from which the hæmorrhage takes place, and the degree of strength possessed by the patient. When the hæmorrhage has been very copious, even syncope, convulsions, and death, have been known to be its immediate effects; but, the quantity of blood discharged not being very great, and the patient young and robust, the strength will frequently be not at all impaired; while in plethoric habits, or in cases of much local congestion, even a degree of ease, and an improved condition of the general health, have been known to result from the occurrence of a spontaneous hæmorrhage.

In many acute diseases, especially in violent fevers, hæmorrhages from various organs frequently occur, as accidental phenomena; and when they take place during the height of the paroxysm, they are most generally beneficial, being speedily followed by a marked melioration, sometimes the entire subsidence, of the principal symptoms of the case; those, however, which occur in the course of what are termed malignant fevers, are most commonly a bad symptom, and, especially if extensive, or frequently repeated, are not uncommonly the precursors of a fatal termination.

In reference to the duration of an hæmorrhage, there is nothing fixed; it may continue from a few minutes to many hours, days, or even months. One of the most remarkable points connected with the history of these diseases, is their tendency to a recurrence, either from the same, or from a different organ. This tendency is peculiar to all the varieties; the number of instances, in which a spontaneous hæmorrhage has appeared but once, in the same individual, bearing no proportion to those, in which it has been again repeated, after a longer or shorter interval. This disposition to a recurrence, may depend upon some peculiarity of constitution, or organic conformation; or upon the continuance, or peculiar liability to a return, of the same causes by which the hæmorrhage was produced in the first instance. But it is also a fact worthy of notice, that the preceding hæmorrhage would appear to be an active cause in producing a disposition to their subsequent repetition; what confirms this, is the fact, noticed by many practitioners, that accidental or artificial discharges of blood from the system, repeated several times, after nearly equal intervals, produce an absolute necessity for their continuance; or, if neglected, and no other evacuation be established to supply their place, give rise, very generally, to spontaneous hæmorrhages, in individuals who had not previously been subject to them.

While some hæmorrhages return at irregular intervals, in many instances, they have been observed to assume a character of perfect periodicity in their recurrence. Some are reproduced after intervals of considerable length, as once or twice in the course of a year, or not more than once in two or three years; while others, particularly hæmoptysis and hæmorrhoides, may be repeated daily, and continue thus to recur for many days, or even months.

Another peculiarity of spontaneous hæmorrhages, is the tendency of the several varieties to succeed to, or replace, each other, either at different periods of life, or in a space of time extremely short. These metastases take place, occasionally, without any appreciable cause; but frequently they are the result of causes, which determine the blood from the organs primarily affected, and solicit its afflux towards those which become, subsequently, the seat of the hæmorrhage. Thus, we are assured by several of the French writers, the topical application of cold, and certain circumstances affecting the mind, have produced a sudden suppression of the hæmorrhoidal flux, which was immediately followed by the occurrence of epistaxis, or of apoplexy.

When in hæmorrhage the discharge of blood is repeated in any considerable quantity, at frequent, short intervals, it produces in the constitution a very important and perceptible change. The action of every organ becomes enfeebled, especially of those destined to loco-motion; the skin becomes pale, discoloured, semitransparent, and not unfrequently of a greenish hue; the heat of the system is diminished; the pulsations of the arteries are weakened, and the respiration is hurried by the slightest exercise;

the blood drawn from the veins, as well as that which escapes spontaneously from the capillaries, is pale, serous, and little disposed to coagulate; and, after death, that contained in the larger vessels, presents, we are informed, similar characters, while its quantity is much less than is ordinarily found in subjects that have died from other diseases.

In regard to the remote causes of spontaneous hæmorrhages, as a general proposition, it may be laid down, that whatever is capable of augmenting the volume of the blood, or of either directly or indirectly determining it in an undue proportion to any particular part of the system, will concur to their production. The list of the circumstances, by which one or other of these effects may be induced, is of very considerable length; without entering into details, it may not be unprofitable, in this place, to run rapidly over it; for the nature of the remote causes, by which hæmorrhages are acknowledged to be produced, will have some bearing upon a point, relating to their proximate cause, hereafter to be considered. Spontaneous effusions of blood, are, very generally, referred either to the use of too great a quantity of aliment, or of too nutritive or too stimulating a quality; to indolence, or too little exercise; to the suppression, or simple diminution, of habitual evacuations; to the too great augmentation of the heat of the body, by a high degree of atmospherical temperature, remaining in very warm rooms, or other situations, too great a quantity of clothing, &c.; to the sudden application of cold, particularly when the body has been overheated by exercise or other cause; to the abuse of alcoholic liquors; to some sudden or violent emotion of the mind; to a forced march, running rapidly, particularly up a steep ascent, or indeed any violent or unusual efforts of the muscular system; to irritating substances, inhaled into the lungs, or admitted into the stomach; to violent efforts to vomit; to the action of drastic purgatives, stimulating diuretics, &c.; to blows, and other external injuries, inflicted upon the body; and, finally, to a rapid and considerable diminution in the weight of the atmospherical pressure. It is evident, that, of the foregoing, some are to be considered in the light of predisposing causes, and others of exciting; and it may be a question, whether certain of them are not equally productive of accidental, as of spontaneous hæmorrhages. Besides the above, many other circumstances do, undoubtedly, concur, in certain cases, to the production of these diseases; but as those enumerated are fully sufficient for our present purpose, we shall here close our remarks in relation to this point, calling, however, the attention of the reader to the fact, that the majority of the causes enumerated are either *direct or indirect irritants* of some portion of the system, and that they are as frequently the cause of inflammation and fever, as of an effusion of blood. According to the report of some writers, the occurrence of spontaneous hæmorrhages would appear, occasionally, to depend upon some peculiarity of constitution, transmitted from parent to child.

Having premised these few remarks, in relation to the leading phenomena and remote causes of spontaneous fluxes of blood, we are now prepared to consider the all-important question, what is the particular morbid condition, in the vessels of a part, upon which their production immediately depends? This is a subject, it is well known, that has given rise to much speculation, and in relation to which, very different doctrines have been maintained by the founders and adherents of the various medical sects. From the writings of the ancient physicians, but little information can be expected; entirely ignorant of the physiology of the circulatory system, the latter were, of course, incapable of arriving at any clear conceptions of the morbid conditions to which it is liable; hence we find, that their theories, in regard to the proximate cause of hæmorrhages, are equally applicable, in many points, to fluids circulating in inorganic tubes, as to those under the control of vessels possessed of vital functions: for example, according to the opinions of the early Greek physicians, all morbid discharges of blood result from one or other of the five following causes: 1. From *anastomosis*, or exhalation; 2. From *rixis*, or rupture; 3. From *dieresis*, or tearing; 4. From *diapedesis*, or transudation through the pores of the vessels; and, 5. From *diabrosis*, or erosion. This doctrine was admitted as true, and taught with but little variation, until the time of PARACELSUS, by whom all hæmorrhages were referred to an erosion of the vessels, produced by an acrid condition of the blood, resulting from an excess of salts.

STAHL appears to have been the first, who made any advances towards the true explanation of the nature of these diseases. He divided all hæmorrhages into two general classes. The first contained those resulting from wounds, rupture, or other solutions of continuity in the blood vessels, in the production of which, the latter are entirely *passive;* the second included those which occur spontaneously, to which he gave the name of *active.* The proximate cause of these, he attributes to a tonic, or salutary, movement, which directs the blood from the centre to the circumference, which movement is produced by the operation of the laws of organization, and is subordinate to the action of the vital forces, &c.; in other words, active hæmorrhages are salutary discharges, produced by the anima medica. According to HOFFMAN, at the moment when the flux of blood takes place, the blood, compressed between the heart, which forcibly drives it forward, and the capillaries, which, from their state of spasm, refuse it entrance, procures itself a passage, by bursting the sides of the vessels, and is thus discharged, either externally, or into one of the cavities. Others, with the author of the *Elementa Medicinæ*, have ascribed hæmorrhages, invariably, to an asthenic condition of the system, to the alteration or too great fluidity of the blood, an atony, or too feeble tension of the vessels, and a relaxation of their extremities. But the most popular doctrine of the present day, the one which is maintained by the majority of English and American physicians, is, that all spontaneous effusions of blood depend upon either an *active* or a *passive* condition of the vessels from which the hæmorrhage takes place; hence, the common division, in our practical works, of hæmorrhages into active and passive. The former are defined to be, those which occur in robust or plethoric constitutions, and are accompanied with general febrile symptoms; they are supposed, invariably, to depend upon an increased impetus in the vessels concerned, by which the blood is driven with unusual force into their extremities, which it opens, either by anastomosis, or by rupture. Passive hæmorrhages, on the contrary, are such as occur in relaxed and debilitated habits, unattended with fever, and which, instead of being produced by any increased activity in the vessels, are the result of such a degree of debility, or inertia, in their extremities, that the latter are no longer capable of presenting any resistance to the free passage of the blood through them.*

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* The doctrine of active and passive hæmorrhages, as laid down in the

With respect to active hæmorrhages resulting as a consequence of the rupture of one or more of the blood vessels, produced by some violent shock imparted to the heart or arterial system, whereby the blood is impelled with undue force to a particular organ, notwithstanding the supposition of their being those of most frequent occurrence is assented to by many highly respectable authorities; yet, on a more close examination of the subject, we shall find ourselves obliged to consider them as extremely rare. It is not impossible, we admit, that the exciting cause, here referred to, may occasionally give rise to an hæmorrhage; but, in the great majority of cases, we shall be forced to confess, that there must have previously existed, in the part from which the flow of blood proceeds, a certain morbid condition, upon which alone the hæmorrhage actually depends. Experience proves, that the discharge of blood is subsequently repeated, in the same individual, under very different circumstances, and without any increased impulse being imparted to the circulatory system; while, on the other hand, the same shock, which has been supposed to be so common and so fruitful a source of hæmorrhage, is found to occur every day, in hundreds of individuals, of every habit and constitution, without inducing the presumed rupture of a blood vessel. In many instances, also, in which the hæmorrhage has been attributed to this cause, the symptoms which are afterwards developed prove, that, instead of having resulted from an

text, is the one generally found in the books; by a few writers, however, it has been slightly modified; thus, by Darwin, those hæmorrhages accompanied with general fever, are referred to a too powerful exertion of "the capillary action," by which the blood is propelled forwards "more rapidly than the veins can absorb it;" while those attended "with a weak pulse, and other symptoms of general debility," are supposed to result from "the absorbent power of the veins being diminished, or a branch of them having become paralytic." [See Zoonomia, vol. 1. sect. xxvii.] Others suppose all spontaneous hæmorrhages to depend upon "a disproportion between the force or power of the heart, and the resistance of the extreme vessels;" when the former is morbidly increased, and the latter impaired, the capillaries are either ruptured, or the blood is driven through them into the exhalants, giving rise to *active* hæmorrhages; but when "the extreme arteries are much weakened, the ordinary, or even a diminished, force of the heart may rupture them," and the effusion of blood, in this case, is what they term *passive* hæmorrhage.

accidental rupture, it was intimately connected with an incipient organic læsion of the organ in which it was seated.

Several of the older writers, and, among others, MORGAGNI, have called in question the presumed frequency of these ruptures of the vessels, in parts affected with a morbid flux of blood. If, indeed, a rupture of the blood vessels, in consequence of an undue determination of blood into them, were ever possible, should we not expect to find it, at least, a very frequent occurrence, when, in certain surgical operations, by tying the principal artery of a limb, an increased volume of blood is suddenly driven, with all the force of the circulating powers, into the collateral branches? But we ask, has such a result ever been witnessed? Again, in those cases of hæmorrhages, of extremely frequent occurrence, in which the flow of blood during life is suspended, and again recommenced, at short intervals, can we reasonably suppose, that there can take place, each time, a rupture and cicatrization of the vessels, corresponding to the discharge and its suspension? It very commonly happens, also, that the hæmorrhage commences and finishes, each time it is produced, by a discharge of mucus: now, can it be imagined, with the least degree of probability, that in these cases, the mucus, then mucus mixed with blood, and, finally, pure blood, have not been furnished by the same outlets? Or is it necessary, or rational, to suppose the mucus and the blood to be furnished, the one by the exhalants, and the other from a rupture of the vessels? But, while reasoning from the phenomena of hæmorrhages, renders the idea of their production from a rupture of the vessels extremely improbable, we shall find, that the non-existence of these ruptures is proved, beyond the possibility of a doubt, by an examination, after death, of the parts that had been concerned in the disease. The opinion of the older writers, already alluded to, as to their extreme infrequency, was based upon the result of post mortem examinations; but it is to BICHAT, and other late inquirers, that we are indebted for the most conclusive evidence upon this point. The former, in his *Anatomie Générale*,* declares, that in numerous examinations of the bodies of patients who had died during the presence of hæmorrhage, the most minute examination, even by the glass, of the membranes from which the blood had escaped, could not discover any erosion, rupture, or other perceptible læsion of the blood vessels. MARENDEL, who has also, subsequently to BICHAT, examined with much care the appearances presented after death, by the tissues which had been the seat of hæmorrhages, confirms fully the foregoing statement in relation to the absence of any rupture in the vessels, from which the blood had been poured out.* It being, then, satisfactorily demonstrated, that there does not exist in cases of spontaneous hæmorrhages, any rupture, or other solution of continuity, in the vessels, "there remains," observes CHOMEL,† "in the present state of our science, but one mode of explaining the effusion of blood; it can take place only through the same vessels which pour out the mucus, the serum, &c. on the surface of the different mucous, serous, and other tissues—vessels, the existence of which cannot be doubted, although we are ignorant of their structure and arrangement."‡ Spontaneous hæmorrhages should, therefore, he very plausibly concludes, be referred to morbid excretions, and be placed in our nosological tables, by the side of dropsies, mucous fluxes, &c.

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* Tome II. page 563-571.

It has been objected to this doctrine, that in many cases, the amount and rapidity of the hæmorrhage are such, that they can be accounted for only by supposing, that a vessel of some magnitude has been ruptured, the exhalants not being presumed capable of throwing out so considerable a quantity of blood within so short a period. This objection is rather specious than solid, and is completely overthrown by a reference to the extensive discharges of mucus, &c. which take place from the exhalant vessels, during certain states of irritation. Every practitioner is aware, that, in these cases, the quantity of fluid poured out is immense: MORGAGNI cites two instances, in one of which, more than forty pounds of a watery fluid were voided from the bowels in a single day, and in the other, sixteen pounds within twelve hours.§ The amount of discharge furnished by the exhalants in these cases, will bear a comparison with any of the examples of excessive hæmorrhage recorded by Bartholin, or Lusitanus, or even those referred to in the *Elementa Physiologiæ* of Haller.*

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* Essai sur l'Irritation. Paris. 1807.

† Des Hémorragies. Paris. 1820.

‡ This is, in fact, a mere repetition of the opinion which had been previously advanced by BICHAT, in his Anatomie Générale, tom. ii p. 571.

§ MORGAGNI de Sedibus et Caus. Morborum. Epis. xxxi. sec. 8. 9.

Although the doctrine of active and passive hæmorrhages, as already explained, has, with some slight modifications, been the one most generally maintained and taught; yet there have not been wanting individuals in the profession, who have expressed doubts as to some of its principles, while others, more recently, have been induced wholly to reject it. Thus, Broussais, and his followers, denying that, in the production of spontaneous effusions of blood, the vessels are ever passive, refer them all to either a direct or indirect irritation of the capillaries of a part.† As a consequence of this irritation, the circulation becomes there more rapid, a greater quantity of blood flows through its vessels, while, at the same time, those which in their healthy state transmit only white fluids, become now injected with blood. From these changes result, in most cases, increased redness, heat, pain, and tumefaction, in a degree corresponding to the texture of the part in which the irritation is seated; this irritation, finally, may give rise either to an inflammation, or the vessels may be induced to relieve themselves of their congestion by an hæmorrhagic action. According to this doctrine, therefore, all spontaneous effusions of blood are active, and result from the same causes as are productive of inflammation.‡

So far as it regards those fluxes of blood, which are attended with general febrile symptoms, the above explanation of the production of hæmorrhages will not be very strongly objected to, by even the partisans of the common doctrine. It was the same, very nearly, as that proposed by BICHAT, PINEL, BRECHETEAU, and others, all of whom were believers in the existence of passive hæmorrhages. In his *Anatomie Générale*, we find BICHAT referring to the many points of resemblance between the condition of parts labouring under inflammation, and such as are the seat of active discharges of blood. MARENDEL, in his very valuable treatise on irritation,* makes a similar remark; while Dr. LEFEBVRE, in his inaugural dissertation, published at Paris, in 1812, has pointed out, very forcibly, the analogy between the two diseases. The latter writer has shown, that inflammation and hæmorrhage are of most frequent occurrence in similar tissues; that their remote causes are, for the most part, the same; that in their symptoms, as well as terminations, they resemble each other in many particulars; and, finally, that the two diseases are occasionally changed, reciprocally, the one into the other. This striking analogy between inflammation and many cases, at least, of spontaneous hæmorrhage, is fully borne out, by the appearance discoverable in each upon dissection. Thus, in hæmorrhages from the mucous tissues, the morbid appearances after death are increased redness, and, in consequence of the distended state of the vessels, a slight thickening of the part from which the flux of blood has proceeded. When the hæmorrhage occurs from a serous membrane, the redness is less evident, but groups of vessels still engorged with blood, will be found upon its surface.†

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* As we have hinted already in the text, we are not prepared to maintain, that in no instance whatever is hæmorrhage the result of an accidental rupture of the blood vessels. The late Professor Wistar, in one of his lectures, related an instance of epistaxis, occurring in an old lady, in which, upon examination, the blood was observed to proceed, *per saltum*, from a rupture in one of the small arteries within the nostrils, and which could only be arrested by continued pressure upon the bleeding vessel. Somewhat similar cases might, probably, be cited. Latour, in his *Traité des Hémorragies. Orleans.* 1815. Tom. 1. page 268, &c., devotes a chapter to these "hémorragies par rupture;" but in the examples which he adduces, the effusion of blood, in almost every instance, was found to have resulted from a rupture of the veins.

† Examen des Doctrines Medicales, prop. 198, 199.

‡ Ibid. prop. 200.

The admission, however, that the above remarks are equally applicable to all spontaneous discharges of blood, will, by many, be strenuously opposed: the existence, or non-existence, of passive hæmorrhages being, therefore, a subject of no little interest and importance, a somewhat minute examination of the arguments in relation to it, will be demanded.

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* Essai sur l'Irritation. Paris. 1807.

† MARENDEL sur l'Irritation Hémorragique. This writer, however, informs us, that all hæmorrhagic irritations do not present similar effects; while those which he has designated by the term, "*éfforts hémorragiques*," exhibit no alteration in the organs in which they had been seated; nevertheless, in the parts surrounding, a distended condition of the vessels is observable, and frequently, at certain points, an increase of redness.

The mere admission, that spontaneous hæmorrhages do depend upon an active condition of the vessels, might be assumed as an argument against the existence of those in which the latter are presumed to be passive; for it is not very reasonable to suppose, that precisely the same effect can be produced, by two organic conditions of a part diametrically opposite to each other: notwithstanding, however, the contradiction that this opinion would appear to imply, we should, nevertheless, be under the necessity of admitting it, were it capable of being demonstrated; but we shall be enabled, we conceive, to show, that the passive character of spontaneous hæmorrhages is, in every instance, a mere gratuitous assumption, unsupported by any direct proof.

It is almost exclusively from the absence of the *molimem hæmorrhagicum*, as it is termed, or general febrile symptoms, that the supposition of the passive nature of certain hæmorrhages has been attempted to be established; in other words, when they take place in the young, the robust, or the plethoric, and are attended with the phenomena of general excitement, they are acknowledged to be active; when they occur under opposite circumstances, it is contended, they are passive. But, as correctly remarked by Dr. Parr, " degree does not change even a species," according to the canon of the systematics; and often, in the lowest states of general debility, while the extremities are cold, the part affected is peculiarly hot, and the pulse throbs with vehemence. There is not, indeed, a greater fallacy in medical reasoning, than that of inferring the nature of a local disease, merely from the absence of certain general morbid phenomena. Facts innumerable are to be found upon the records of our profession, to prove, that local irritations of very considerable extent do not, invariably, give rise to symptoms of general excitement of equal intensity; and that in many cases, they are entirely unaccompanied by the latter. From the want of a general recognition of this important circumstance, errors of the most serious and fatal character have been committed in medical systems and practice. Judging of the strength or weakness of every portion of the body, from the nature, solely, of the general phenomena, the inflammatory character has, by many, been accorded to those diseases of the viscera, only, which are attended by an increased colour of the skin, heat of the surface, strength of pulse, and an augmented energy of the muscular system; while to the class of *asthenia*, has been referred, every morbid condition of an internal organ, in which these exterior symptoms are absent: thus, it is well known, that certain inflammations of the abdominal viscera, of the most acute character, demanding for their cure prompt and active depletion, have, in certain systematic works of no very remote date, been set down as diseases of debility, in which all active depletion is prohibited, merely from the circumstance of their being marked by a diminution, rather than an increase, of the heat and redness of the exterior portions of the system, by considerable prostration of strength, and by a small, contracted, sometimes scarcely perceptible, pulse. To a similar source are to be attributed, nearly all of those "diseases of debility," which constitute so conspicuous a class in many of our systems of nosology.

Even those phlegmasiæ, which are, ordinarily, attended with febrile symptoms of the most decided character, have, in a number of instances, been known to arrive to a high degree of intensity, accompanied only with general symptoms so obscure, that their very existence has not been suspected, until it has been revealed upon dissection. For conclusive evidence in support of this statement, the reader is referred to the work of MORGAGNI, to the *Phlegmasies Chroniques* of BROUSSAIS, and to other writers on pathology.

From the above fact, is not the inference, we demand, perfectly just, that a similar variety in the degree of general excitement may take place, in reference to the hæmorrhagic irritation? An irritation, which, it is acknowledged, is invariably marked by an exaltation of the vitality of the part affected, less intense than that by which actual inflammation is produced.

In regard to the argument in favour of passive hæmorrhages, drawn from the weakness or exhaustion of the patient, it is certainly unnecessary, at the present day, to enter into any argument to prove, that active diseases are not confined exclusively to the young, robust, and plethoric constitution. The physician who is not aware, that local inflammations, the most rapid in their progress, may and do affect, as well subjects in a state of very considerable debility, as those under opposite circumstances, has indeed profited but little from his study of disease. Neither the absence, therefore, of the symptoms of general excitement, nor the debility of the patient, can be adduced as a conclusive proof of the passive character of an hæmorrhage: on the contrary, whether it occur in the strong, or the debilitated, whether it be attended, or not, by the phenomena of fever, the condition of the part affected with the effusion of blood, will be found to be always the same; the intensity of the irritation, it is true, may vary, and in consequence, the degree of the general excitement, the latter of which is, likewise, invariably subordinate to the individual sensibility. Thus, in a subject who is not already in a state of debility, the hæmorrhage will be preceded by a sense of prickling, heat, and weight, in the part; by chilliness; by a small and contracted pulse; followed quickly by a general flush of heat, and a pulse full, hard, and rebounding: while in the weak, and those possessed of but little irritability, the local phenomena will be less marked, and the general symptoms may be entirely wanting; but even in the latter case, the redness and heat of the part affected will be always increased, and the patient will experience in it some degree of weight, and other uneasiness.

Even in an individual affected with an hæmorrhage, attended by all of the phenomena of general excitement, after the loss of a certain quantity of blood, these phenomena will disappear entirely, and give place to all the ordinary symptoms of debility, and yet the discharge of blood may still continue. In these cases, on the doctrine of passive hæmorrhages, we shall be obliged to admit, that the flux of blood, at first decidedly active, has subsequently, from the diminution of the quantity of that fluid in the system, and the consequent loss of strength in the patient, assumed a passive character; and that even this may be again rendered active, by the administration of stimulants: but how can we conceive, in the present state of pathology, that there should occur, suddenly, an entire change in the organic condition of a part; that its state of irritation should give place, at once, to one of extreme atony, and vice versa; while the consequence of these two opposite conditions are still precisely the same? But we have already shown, that the local phenomena are of a similar character whether the flow of blood be, or be not, accompanied with febrile symptoms; the part which is the seat of the hæmorrhage, continues still to possess increased heat and redness, excepting, that after the discharge of blood has continued for a certain time, the local symptoms diminish, of course, in intensity.

If it were true, that the atonic condition of any organ could induce from it a flux of blood, we should certainly expect, those parts which possess the least vitality, to be affected with hæmorrhages, more frequently than others; the contrary, however, is the fact. Again, are the shrunk and withered members of the aged, or of those labouring under palsy, the tissues of which are pale, deficient in irritability and tone—are they ever the seat of hæmorrhage? Those agents, likewise, which, in their action upon the system, are productive of a sedative effect, as cold, for example, far from inducing congestions of blood in the parts to which they are immediately applied, on the contrary, by diminishing the irritability of the latter, cause them to become pale, and prevent the blood from flowing into their vessels in any considerable quantity. A relaxed or atonic condition of a tissue, not being capable, therefore, of giving rise to an hæmorrhage from its vessels, how can it be imagined, that the debilitated capillaries, after being passively distended with blood, will allow it to flow freely from their open orifices, thus occasioning what have been termed passive hæmorrhages?

If ever hæmorrhage were the result of an atonic condition of the capillaries, allowing the blood contained in them to escape from their gaping extremities, should we not expect to find it, an almost invariable concomitant of that state of extreme prostration of the system, consequent upon long continued diseases, violent fevers, excessive evacuations, &c.? This is well known, however, not to be the case. Those effusions of blood, which constitute the symptoms of certain affections termed malignant, and supposed to be the result of debility, we shall have occasion shortly to notice.

In the mucous membranes, an hæmorrhage is frequently observed to alternate with inflammation; that is to say, the symptoms of the latter disappear as soon as the flow of blood is established, and again manifest themselves when the hæmorrhage ceases. Thus, it is by no means rare to witness the entire and prompt arrest of a violent inflammatory affection, by a copious discharge of blood, occurring spontaneously; or, on the other hand, to see an hæmoptysis stop, at the same time that the increased cough, pain, and development of febrile symptoms, announce that the irritation in the mucous membrane of the respiratory organs, has assumed a greater degree of intensity. Now, these phenomena take place in weak subjects, as well as in the strong; in those who are affected with what are termed passive hæmorrhages, as in those who exhibit all the symptoms supposed to be peculiar to the active species: but would it not be in the highest degree absurd, to assert, that in the first of these cases, the flow of blood depended upon a passive condition of the vessels? This would be to suppose, that the same tissue can pass rapidly from a state of extreme atony to that of inflammation, and from the latter condition, immediately, to that of debility; a supposition inconsistent with every established fact in pathology.

The effects of astringents, in suppressing certain hæmorrhages, has been advanced, as a strong argument in evidence of their arising from a relaxed or atonic condition of the vessels; but, it may be asked, do not these very remedies produce similar results in the cure of certain inflammations, even during their acute stage? Every one must have witnessed the symptoms of ophthalmia, of gonorrhœa, and of other inflammatory affections, yield to the use of astringents. The fact is, that whenever the irritation is slight, these articles produce a contraction of the capillaries, and by that means prevent the consequences of congestion; but, where the irritation is more considerable, astringent remedies rarely fail to augment, instead of allaying it. The same is true, precisely, in relation to hæmorrhages; when intense, and accompanied with symptoms of general excitement, they are scarcely ever controlled, or even benefited, by astringents, properly so termed; but under opposite circumstances, these remedies will frequently, very quickly, arrest them. The effects of astringents, therefore, prove nothing in favour of the doctrine of passive hæmorrhages. But in regard to some of the astringents, as they are termed, that have been found most effectual in the cure of hæmorrhages, the acetate of lead, for example, are we well acquainted with their modus operandi, when administered internally? Are we very certain, that they act by imparting tone to the system, or by contracting the fibres of those parts presumed to be in a state of relaxation? Have they not been found useful in inflammations of a highly acute character? And, finally, are there any of them, which have been found decidedly beneficial in what are considered to be passive hæmorrhages, that are not equally well adapted to the treatment of those acknowledged to be acute? We have a right, we conceive, to demand a satisfactory answer to the above questions, before we can admit, as conclusive, any arguments, as to the nature of a disease, drawn from the mode of action of these remedies in the cure of it. It is, however, to be recollected, that both astringents and tonics may, in certain cases, arrest hæmorrhages, by increasing the local irritation upon which they depend, and causing it to pass to the state of inflammation. This fact cannot be disputed: we have, ourselves, had frequent occasion to witness hæmorrhages, that would be esteemed passive by the supporters of that doctrine, on being promptly arrested by remedies of a tonic and astringent character, immediately followed by all the symptoms of general fever, which demanded an appropriate treatment for their removal.

Every physician is aware, that cold, which diminishes action, is a very efficient agent in the suppression of hæmorrhages, as well in the enfeebled subject, as in the strong. How is it possible, that this can be made to accord with the doctrine of passive hæmorrhages? Will it be contended, that cold arrests these by causing the atonic vessels to contract, and thus prevents the flow of blood into them? But is this the effect of cold in other cases of extreme debility? At best, it is a doctrine very nearly bordering on the absurd, to suppose, that the same remedy, employed in a similar manner, will remove morbid conditions of the same parts, of a nature directly opposite to each other.

The application of blisters upon the chest and thighs, or of sinapisms to the lower extremities, are frequently found very powerful remedies in the cure of those cases of hæmoptysis, epistaxis, menorrhagia, &c., which present all the supposed symptoms of passive hæmorrhages. This circumstance would be alone sufficient to prove, that all spontaneous effusions of blood are the result of irritation; for the remedies alluded to, could have no influence, whatever, in re-establishing its accustomed vitality to a remote part, in a state of extreme atony; it is evident, they modify only the action of such as are in a state of irritation. To this argument it may be replied, that these remedies concur to the cure of passive hæmorrhages, by determining the circulation from the part affected, and by that means unload the relaxed vessels of their blood. Without entering into any examination of the truth of this revulsion, supposed to be produced by the application of stimulants to distant parts, we will merely remark, that, in passive hæmorrhages, it is not pretended any degree of congestion exists in the organ from which they arise, or any increase of action in its vessels; but, in the language of Bichat,* the organic sensibility is destroyed, so that the blood is permitted simply to transude through the exhalants. Now, admitting all that can be contended for on the principle of a revulsion induced by blisters or sinapisms, the latter could never effect the cure of passive hæmorrhage, unless they had the power of entirely preventing the blood from penetrating into the affected tissue; or, in other words, of completely suspending the circulation through its vessels; for, so long as the circulation in the part continues in any degree, the blood transmitted by the arteries must find a passage through their relaxed and gaping extremities. But we may remark, that depriving the vessels of their natural stimulus, the blood, is rather a novel method of rousing them from their state of atony.

Those hæmorrhages, ecchymoses, and petechiæ, which occur in the course of certain malignant and low states of fever, have been, almost invariably, considered as instances of a passive condition of the blood vessels. Sydenham,† and other writers, have, however, long since maintained a contrary opinion. When they occur during the height of the exacerbation, and on their first appearance are of a bright colour, there appears to be but little difficulty in admitting, that the vessels are active in their production; a circumstance which is rendered evident, by the fact of these petechiæ appearing at that stage of the disease, when the action of the capillary system is at its greatest height, and by their becoming pale at the instant when the system is sinking into a state of death. But it is very generally contended, that when the petechiæ, or hæmorrhages, are of a dark, livid, or black colour, and occur during the stage of collapse, they must then, evidently, result from a debilitated, or, as one writer expresses it, "paralytic," condition of the extreme vessels.* In our reasoning upon this point, it must be recollected, that these dark hæmorrhages are of most frequent occurrence in fevers connected with serious affection of the brain, or in those attended with extensive congestion of the great venous trunks, and right side of the heart, and in which the blood discharged by the hæmorrhage, as well as that drawn from the arm, is in a dissolved, or uncoagulable state. Now, it is perfectly unfair to draw any inference in proof of the nature of ordinary hæmorrhages, from fluxes of blood appearing under the above peculiar circumstances, there being a very great dissimilarity between the morbid condition of the system in the two cases. Nevertheless, we see no reason whatever, why we should not refer even these hæmorrhages to a *morbid action* of the capillaries; and it remains with those who have so long contended for the doctrine, to prove that they are produced by a passive or inert condition of the vessels, the result of extreme debility. That in the latter stage of the fevers referred to, the capillaries do not labour under such a degree of debility as to render them incapable of being the seat of morbid action, is evidenced by the circumstance of inflammation and its consequences, frequently occurring, on different parts of the surface, at this very period; even in the most decided cases of congestive fever, the closing scene of life is not unusually marked by all the symptoms of general excitement, by "a glow of heat over the whole body, a dark, flushed face, an accelerated pulse, and partial or general perspiration." Every practitioner, also, who has seen much of the fevers in which the hæmorrhages under consideration most frequently appear, and has reasoned upon what he has seen, must acknowledge, that, so far from remedies adapted to rouse the vessels from their supposed state of debility, being those best adapted to prevent the occurrence of these effusions of blood, they are, on the contrary, the very means, in most instances, by which they are the most certainly induced.* If, indeed, the occurrence of petechiæ and hæmorrhages, in the advanced stage of malignant fevers, were the result of the debility merely, in which every portion of the system is supposed to be involved, why do they not attend, also, the advanced stage of every violent, or long continued disease, a period when the degree of debility can scarcely be exceeded?

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* Anatomie Générale, tom. ii. page 563.

† In whatever disease they occur, he declares, "à vehementi inflammatione et sanguinis nimiâ attenuatione, unde sanguis per oscula vasorum quasi vi exigitur, semper ortum ducant."—Opera Omnia, p. 558.

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* See Milman's Inquiry into the Nature, &c. of Scurvy and Putrid Fevers, 1783; and Currie's General View, &c.

Discharges of blood, occurring under those general circumstances which are supposed to be diagnostic of passive hæmorrhages, characterize that peculiar affection, denominated *purpura hæmorrhagica*. In this disease, we are informed by Dr. BATEMAN, who made it the subject of his inaugural dissertation, that the cuticle is frequently raised into a species of vesicles, filled with black blood, which break from the slightest force, and give escape to their contents; the gentlest pressure upon the skin, even in feeling the pulse, will often produce a purple blotch like that remaining after a severe bruise; profuse hæmorrhages, likewise, take place from the ears, nose, fauces, stomach, bowels, &c. The disease is always attended with extreme debility, depression of spirits, and a pulse commonly weak, and sometimes quickened; it makes its appearance, frequently, during convalescency from bilious and other fevers.†

If it were possible to adduce an example of passive hæmorrhage, judging from the general phenomena, we should certainly expect to meet with it in the case before us; but, so far from the effusions of blood in purpura hæmorrhagica being the result of mere debility, or an atonic, paralyzed, or relaxed state of the capillary system, the remedies most successful in their treatment are found to be evacuants; free and repeated purging, and local or general blood-letting; while wine, bark, and other tonics and stimulants, are not only inefficacious, but decidedly prejudicial.*

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* In the production of the dark-coloured petechiæ and hæmorrhages, which attend the latter stage of malignant fevers, it is supposed, by many, that the venous system is chiefly concerned. By DARWIN, they are referred to a diminution, or entire suspension, of the action of the extreme veins; in consequence of which, the blood brought by the arterial capillaries, in place of being taken up by the former, accumulates in a part, causing its vessels to swell, and, finally, burst. A late writer, Dr. POTTER, supposes them to result from an inflamed, congested, or irritable state of the minute veins.

† BATEMAN, p. 110.—Med. Recorder for July, 1826. p. 216.

Another proof of the existence of passive hæmorrhages, is attempted to be drawn from the petechiæ and discharges of blood in scurvy. This argument is the last and desperate resort of the partizans of this doctrine. With the pathology of scurvy, we are as yet but little acquainted; weakness of the muscular system we must acknowledge to be one of its principal characters; but mere debility of the system will not produce it, neither will tonics cure it: we are, indeed, every day presented with instances of extreme exhaustion, from a variety of causes, but without the occurrence of scurvy. As far as we can judge from its symptoms and course, there exists, in the latter affection, a morbid alteration in the composition of the blood, a vitiation of all the fluids of the body, and, consequently, a diseased state of the nutritive process throughout the system. If then the blood and other fluids no longer possess the same properties as in health, if the very structure of the tissues be changed, the action of the capillaries, it is contended, must be changed also; hence, from the effusions of blood which take place under such circumstances, nothing can be concluded in favour of the passive character of ordinary hæmorrhages; neither are we permitted to infer, that the condition of the vessels, upon which even these effusions of blood depend, is that of simple atony; for we have already shown, that in no one of the other circumstances under which hæmorrhages take place, are they ever the result of debility. It has been very properly remarked by a late writer,† that persons affected with scurvy are not exempted from the occurrence of inflammations; for in that variety of the disease denominated *scorbutus calidus*, which is attended with increase of thirst, heat of the skin, and a frequent pulse, the scurvy is complicated with local phlegmasiæ; and hence, it is reasonable to suppose, that they may be affected also with that degree of irritation upon which hæmorrhage depends: but in ordinary cases, the effusions of blood in this disease "are, it is presumed, the result of the vitiation of the blood and of the nutritive process; effusions which take place in the substance of the tissues, rather than from the surface of the mucous membranes."

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* Bateman.—Ed. Med. & Surg. Journal, Jan. 1809, and Ap. 1813.—Med. Record. July, 1826.

† Broussais Examen des Doctrines, &c. prop. 214.

According to the doctrine of Broussais, scorbutic hæmorrhages may be of two species, "the one similar to acute hæmorrhages in general, from irritation of the sanguineous capillaries; the other from their disorganization, the result of defective nutrition. The ecchymoses, as they generally appear, depend probably upon the obstruction to the progress of the blood in the veins."

From a review of the foregoing arguments, and there are many more which might be adduced, it will be found, that the opinion so long maintained, of certain spontaneous hæmorrhages being the product of a relaxed or exhausted condition of the extreme blood vessels, is totally devoid of direct evidence; and that, under all circumstances, the occurrence of passive hæmorrhages is in the highest degree improbable. Many of the arguments made use of, as has been already stated, are not original with ourselves; they are all, however, of a nature demanding the serious and candid examination of the profession, and they are now brought forward, that they may be either overthrown or confirmed.

ARTICLE IV.—*The Effects of Atmospheric Air on Exposed Cavities.*

By Jno. Knox Finley, of Chillicothe, Ohio.

As the whole system is liable to frequent accidents, by which internal parts, particularly circumscribed cavities, are often exposed to the air, which in a natural state is not in contact with them, it is very desirable that its effects on these cavities in a state of health should be accurately known. The accomplishment of this object has been my aim in the following essay, in which I have endeavoured carefully "to feel after truth;" and in doing this, have confined myself almost entirely to experiments, together with a few well attested facts, taken from authors of the present day. The result of my observations I now submit to the medical public.

That the air which is so universally present, so pleasantly refreshing to all our senses, and which in a natural state has free access to the very delicate and sensible tissues of several of our organs, should be possessed of stimulating or noxious properties, would strike us at first view as very improbable, and as being totally inconsistent with the general economy of nature. Yet, on this subject a contrariety of opinion prevails; for, while many of the most eminent of the profession consider it perfectly bland and innocent, others, and some of them of the highest authority, maintain that it is highly stimulating, and attribute to its access many of the evil consequences which sometimes result from the opening of serous cavities. These latter appear to have formed their opinion from the phenomena, frequently resulting from the exposure of diseased surfaces; and from the fact, that the free opening of healthy serous cavities is frequently attended with severe local symptoms, and with much constitutional derangement. Of the first, it is not my intention, at present, to say any thing, as my observations on the subject, in its pathological connexions, have been very limited. With regard to the second, it must be admitted, that it is frequently the case; but that it is not owing to the effects of the air, can, I think, be satisfactorily proved; and if this can be shown, it will go far to invalidate the supposition, that it is injurious to the surfaces of diseased cavities.

The serous membranes are very apt to take on inflammatory action from any injury; and when inflamed in one point, the inflammation generally spreads throughout its whole extent, by "continuous sympathy." That this is much more liable to happen in injuries of the serous tissue, than in those of any other, is a fact admitted by all pathologists, and should be borne in mind in the prosecution of this subject.

If the air be really so stimulating as it is supposed to be by many, we might expect to see inflammation, resulting from the exposure to its action, of any part of the body with which it is not naturally in contact; for almost all parts of the system are susceptible of the impression of stimulating substances, although, perhaps, not so readily affected by them as the serous tissue. That this is not the case, however, has been proved by direct experiments. Large quantities of air have been thrown into the cellular structure, immediately under the skin, and retained there until absorbed, without producing any symptoms of inflammation. Sir ASTLEY COOPER, in his lectures by JONES, page 44, mentions, that "a trochar was passed through the skin of a dog, and the cellular membrane was inflated, yet no appearances of inflammation followed."* This I repeated on the cellular substance of a kitten, forcing into it, by means of a gum-elastic bag, attached to a silver tube, a large quantity of dry air. The distention was so great as almost to prevent locomotion for a short time; but the air gradually diffused itself through every part of the cellular structure, and in four or five days was entirely absorbed, without producing any other inconvenience. This has been repeatedly tried on different animals, and always with the same results. Every case of emphysema goes, also, to confirm the truth of this position; for it is well known, that the air in such instances never does harm, except mechanically, from excess in quantity. It being shown, then, that the air is not stimulating in these situations, we should, from analogy, say that it was innocent when brought into contact with serous surfaces. We are, however, not destitute of facts to prove the point.

Dr. DORSEY, in his Elements of Surgery, vol. i. page 71, on Wounds of the Thorax, has the following observations: "The great anxiety which has been shown to evacuate the air, originated in an opinion, that the air of the atmosphere is a violent irritant, capable of exciting great inflammation, an opinion not at all founded in truth. In the year 1790, Dr. PHYSICK injected air into one side of the thorax of a kitten, through a small puncture between the ribs. The wound healed by the first intention, and appeared to occasion very little inconvenience to the animal. On the fourth day, the kitten was killed, and not a vestige of inflammation was observable. Many cases have occurred in the human subject, in which the cavity of the pleura has been filled with air, in consequence of a wound, and the wound being speedily healed, no inflammation has resulted. I once saw an officer who had been wounded with a dirk; the air entered and passed out of the wound during respiration. This wound united by the first intention, and in a week he was completely well, not having experienced a single symptom of thoracic inflammation."

The experiment of Dr. PHYSICK, I repeated in a very satisfactory manner; and lest there should be any doubt about the air having really entered the cavity of the pleura, I shall detail minutely the mode in which the experiment was conducted. I would also remark here, that in this and the following experiments, I was assisted by my friend, Mr. Wessels, who also observed with me the results.

A kitten, the subject of the experiment, being properly secured, a small incision was made through the skin, over the ribs; I then forced the end of the tube already mentioned, obliquely through the intercostal muscles, (the end of the tube was very small, and filed to a sharp point,) in such a manner as not to wound the lungs, and, at the same time, to form a valvular opening. Then, by means of the gum-elastic bag, attached to the other end of the tube, half an ounce measure of *dry* air was thrown in. The incision through the skin was then closed with adhesive plaster; the puncture through the muscles, being very small and valvular, prevented entirely the escape of any of the air into the cellular structure. The wound healed by the first intention; and on the fourth day the kitten was killed, by passing a scalpel between the first and second cervical vertebræ, and dividing the spinal marrow; very little blood was lost. The thorax was then examined, and I easily discovered the *cicatrix* of the puncture on the internal surface of the pleura; but neither about it, nor in any part of this cavity of the thorax, could the least traces of inflammation be discovered. We examined, at the same time, the inner surface of the opposite sac of the pleura, and also of the abdominal cavity, and found them all exactly of the same appearance, uniformly white. The heart continued to pulsate irregularly during the examination.

A similar experiment was performed, by injecting half an ounce of dry air into each cavity of the thorax of a half grown kitten, at the same time. Three days afterwards, it was killed by a blow on the head, and an examination made. Both sides were found perfectly healthy; in no part of either of them could the least signs of inflammation, or any unnatural appearance whatever, be perceived.

I also experimented on the abdomen of a cat, by cutting through the skin, just behind the umbilicus, and forcing the end of the tube through the linea alba. In this instance, an ounce and a half of air was thrown into the peritoneum. The animal seemed to suffer no inconvenience from it, and no appearances of inflammation resulted.

I find very few facts mentioned by those authors who advocate the innocuous nature of the air. They generally refer to tympanitis and emphysema, in support of their opinions. But I think, the above experiments, some of which have been repeated frequently, show very satisfactorily, that the air is not possessed of any stimulating properties.

Dr. **Bond**, of this city, has written a paper slightly connected with this subject,* in which he contends, that the air is injurious, not from any stimulating or noxious quality of the air itself, but from its *conducting powers:* "its power to abstract, or conduct off, heat and moisture." No one, we presume, will deny, that the air is possessed of this power under some circumstances. But in such cases, the irritation is, most probably, produced mechanically by the hard, dry scale, formed on the surface; for if the exposed part be not otherwise irritated, and be of small extent, so as to admit of its being kept in a quiet state, no injury will result from the exposure: should, however, the sensibility of the part be morbidly increased, as in the case of burns and scalds, even this slight irritation will be productive of much injury.

Irritation may also be produced by the "concentration of the acrid principles of the moisture," as Dr. **Bond** has observed; but surely there is nothing in this to show, that the air itself is irritating.

Even these results of free exposure cannot, however, be urged against the innocence of the air, in most of those injuries of serous cavities, in which it is supposed to exert so pernicious an influence; because, in many instances, the opening into them is too small, even if kept constantly dilated, to produce this drying effect. Nor can we, under these circumstances, attribute much to the abstraction of caloric, when we reflect, that the air is a very bad conductor of caloric, much worse than any animal fluid or solid; and, when confined in a living cavity, cannot have much influence, either in drying up moisture, or in conveying away heat: and yet, the symptoms are as severe when inflammation does supervene, as where the opening is greater.

Professor **Thompson**, who is an advocate for the stimulating nature of the air, attributes this effect to the oxygen which enters into its composition.† To ascertain whether oxygen alone was capable of exciting inflammation in serous cavities, I repeated some of the former experiments with this gas, and will here give the results.

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* Vide Phil. Med. Journ. vol. 2. † Vide his work on Inflammation.

The oxygen which I used, was obtained from the decomposition of nitrate of potash. To ascertain its purity, I tried it with an ignited iron wire, which was rapidly consumed with a brilliant white heat. With the same apparatus used in the former experiments, I threw into the right side of the thorax of a kitten, three weeks old, half an ounce of this gas. On the third day, the kitten was killed, and an examination of the thorax made. Neither the pleura, nor any of its contents, exhibited any unhealthy appearances. The experiment was also repeated on the peritoneum of another kitten, and on the cellular structure of a third, with the same results. I would also remark, that, in neither of these cases, did the animal give any evidence of suffering.

I made the same trials also with nitrogen, and with similar results.

The greatest danger from the atmospheric air, is apprehended in injuries of the joints; but on this subject I have not been able to experiment, as I wished to have done. The joints of those animals which I could obtain, were so very small, and so accurately fitted, and their capsular ligaments were so unyielding, as entirely to prevent me from getting any air, or, at least, any perceptible quantity of it, into them. But having shown, as I think, satisfactorily, that neither the air, nor any one of its component principles, is stimulating to similar membranes in other situations, I will be content to refer to a few cases on record, of injuries of the joints, which, I think, will bear me out in the opinion already formed.

The first which I shall notice, is mentioned by Dr. Bond, in the paper already quoted. Page 173 of the Journal.

"The patella was cut across transversely, by a blow from an axe, and divided into two nearly equal portions, so that the joint was laid open, and I had a direct view into it. The patient was a healthy boy, eight years old; and the fragments of the bone united without any apparent affection of the synovial membrane."

The next case which I shall make use of, is the third case mentioned by Hey, on Injuries of the Joints. A wound, two inches in length, was made by the fall of a woodman's bill, dividing transversely the tendon of the rectus femoris, close to the patella. A wound was made through the capsular ligament, so large as easily to admit the finger into the joint. Mr. HEY says, "After examining the interior of the joint with my finger, that no extraneous substance might be left there, I united the lips of the wound with three stitches of the interrupted suture, taking care to lay hold of nothing with the needle, but the integuments. I could not remove the blood from the inside of the joint, for that continued to flow so long as my finger remained in the wound. Neither could I favour the discharge of the blood which remained in the joint, by any method of placing the limb which would answer my principal intention." The knee was kept steady, and the parts relaxed, by placing it in a fracture box, and a perfect cure obtained, without any unfavourable symptoms.

These two cases will, I think, suffice. In both instances, there were large openings into the joints, which must have been exposed for many minutes, to the free access of the air, and that, too, under very unfavourable circumstances; one being complicated with complete division of the patella, and the other, with effusion of blood into the cavity of the joint; thereby rendering the danger of inflammation much greater than it otherwise would have been; and, no doubt, in closing the wounds, at least in the first case, a portion of air remained in the cavity; and yet we see no bad symptoms supervened.

These, with many other cases, which might be mentioned, if necessary, are certainly enough to show, that the bad consequences, which so frequently follow injuries of these parts, do not depend on any agency of the air.

To what, then, it may be asked, are we to attribute the inflammation which certainly does most generally attend injuries of the serous membranes, and particularly those of the joints? I think it may safely be answered, that, in all instances, it depends on the nature of the wound, on the state of the constitution, or on imprudent management of the injured part. If the wound be of such a nature as to prevent union by the first intention, as, for instance, lacerated or contused, we shall have, most probably, violent inflammation throughout the whole cavity; or, if it be a simple wound, whether air be admitted, or not, and improper exertion be made with the joint, the same thing will frequently happen This is a well known fact, and requires no reference to cases to establish it; and certainly no one can reasonably impute it to the effect of the air.

The true explanation, then, of the occasional violence of the symptoms, from what we have said, follows almost of course; that, from the nature of the wound, from undue irritation of a wound, which would otherwise have healed kindly, or from constitutional irritability, inflammation comes on in the immediate part wounded; and by continuous sympathy, to which, as we have already mentioned, serous tissues, when injured, are particularly liable, it spreads, until the whole surface of the cavity is involved.

With all the facts here collected, I do think, that "it remains to be proved, that this fluid, (the air,) which seems so bland and pleasant to our senses, and to the outward surface, is yet a horrible stimulus, when admitted, as a celebrated author expresses it, into the deep recesses of the body;" or, rather, I think it is proved not to be stimulant to those parts.

Article V.—*Remarks upon the Mischievous Effects on Society of Spirituous Liquors, and the Means of Preventing them.* By Samuel Emlen, M. D. one of the Physicians of the Pennsylvania Hospital, &c.

Some of the readers of this Journal will, probably, object to the introduction of an article, which may seem to them not strictly connected with the practice of medicine or surgery; but we hope most of our medical brethren consider every subject, connected with the cause of humanity, as intimately associated with the science which it is the object of our labours to advance. Physicians, more than any other members of the community, are constantly mixing with all classes of people, and thus become more fully acquainted than others, with the causes of human suffering. Nor have they been unmindful of their duty, both as guardians of the public health, and as good citizens, to point them out, and urge the adoption of such measures, as would lessen or remove them They have not considered it their province, merely to visit the bed-side of the sick, but, also, to labour in the wide field of general philanthropy.

Amongst other evils, which medical men have often held up to view, as calling loudly for some remedy, is the disastrous and desolating effects on society of ardent spirits. Statesmen and philanthropists have been well aware of their magnitude, and have long been suggesting and trying means to lessen the mischief which they have seen them every where produce; but still, *intemperance* is the predominant vice of our country. Ever since we commenced the practice of medicine, having been most of the time connected with public institutions, which made it necessary to have constant intercourse with the poor, nothing has so much arrested our attention as this prevailing vice; nothing, within the whole extent of our vision, has appeared so much to demand the attention of every well-wisher of the human race, and the solemn deliberation of our legislative bodies. None see to the same extent that medical men do, the evils which the drinking of distilled spirits inflicts: they see sacrificed to it, thousands of lives, where others are not aware of the cause; where neither neighbours, nor friends, nay, sometimes, when even the lamented victims themselves, did not suspect it. What a frightful item would be exhibited to the public, in our bills of mortality, did they fully disclose the whole number of deaths from intemperance! It is well known to numbers of the medical profession, why this cannot be done. We have long been convinced, however, that if a private record were kept by every practitioner throughout our country, or, at least, in all our large cities, of the number of deaths actually induced by ardent spirits in one year, and published to the world, it would be a more powerful means of awakening the serious attention of every reflecting member of the community to this great evil. We must all agree, that some efficient remedy for this vice is loudly called for, and should be applied; and that it is incumbent upon medical men, to lend all the assistance in their power to effect so righteous an object; mixing, as they do, continually with all classes of society, and seeing a much greater amount of human misery and distress, arising from this source, they are placed, we conceive, under additional obligations to urge its alleviation. We have long thought they might do much more than they have done; and that the influence of the profession, exerted as it ought to be on this subject, would be widely and happily felt. Vices or habits, deeply rooted, are not to be removed in any other way than gradually; and we can see no other way, by which the crime of intemperance can be suppressed, than by a patient and persevering attention, on the part of the advocates of virtue, to hold it continually up to view, in all its enormity, till it shall not only be seen, but felt. It has been in this way, that many prevailing abuses, and long practised injustice, have been made to yield. The calls of reason, of humanity, were heard at first but from few; but, to the honour of the best feelings of our nature, they have, nevertheless, been at last listened to, and obeyed.

If it be asked, then, what remedy we are to look to, ultimately, for the removal of this great plague, and which we should press upon the attention of the country, we answer, we have not been able to anticipate any, which would be likely to prove really efficient, but the *prohibition entirely of the distillation of spirituou liquors at home, and their introduction from abroad.* Many conflicting interests stand opposed to such a measure, but we cannot view them as insurmountable. We might, indeed, ask, would the removal of this great scourge be too dearly bought at any pecuniary sacrifice in the revenue of our country, or by the whole mass of our population concerned in the profitable traffic which the distillation and consumption of ardent spirits afford? We believe not. But, most assuredly, the whole country would be a gainer, by relinquishing the traffic altogether; not merely in wealth, but in the preservation and happiness of millions of its inhabitants. We cannot really see any greater obstacles in the way of the prohibition we propose, than were to be met with in accomplishing the great work of the abolition of the slave trade, and releasing from bondage many thousands of Africans, who were mixed through the population of most of these states, and closely allied to their pecuniary interests. There was a time, and not very remote, when scarcely a voice was heard to advocate the African's cause, and point out the cruelty and injustice of trading in human flesh. Now, all civilized and christian nations conspire to declare it piracy.

Let us for a moment imagine, that ardent spirits, under whose tyranny so many thousands are also held in bondage, has been removed; that the strong arm of the law has controlled this great destroyer of lives and morals; how does the heart glow at the prospect, in casting the eyes over the happy reformation! But it may, perhaps, be said, spirituous liquors are for some purposes indispensable; (we know them not.) On some occasions, would not life be endangered by such a deprivation? We would reply, better that human life should, in a few instances, be sacrificed to the want of it, than suffer the infinitely greater sacrifice of lives from the use of it, and the multitude of other ills it inflicts on society. But even in those forms of disease, when wine, or other fermented liquors, are not to be relied on as sufficient to keep up the desired excitement of the system, which, we are sure, most, if not all, practitioners, will agree with us they are, almost without exception; there are yet other powerful and diffusible stimulants to resort to, as substitutes for distilled spirits. As a common drink, the whole body of the profession will undoubtedly unite with HALLER, in declaring, that "distilled spirits should rather be considered a poison, than a *beverage*." We should not admit of the popular reasoning, as applicable here, "that the abuse of a thing is no argument against its use," all use of it being an abuse of it. It is mischievous under all circumstances; because, however moderately it may be used, it leads inevitably, in almost every instance, if continued, to excess, and certain destruction of life. Every victim of intemperance, at one time, thinks himself safe, and has no fear of consequences; when felt, alas! he is then a sure captive, an abject slave.

The opinion, which has obtained almost universally amongst the labouring classes, that spirituous liquors are necessary to enable them to undergo the bodily fatigue to which they are subjected, is a dangerous and fatal error. Notwithstanding it is allowed by the orders of government to the navy and military, and by great numbers who have labourers in their employ, it is, nevertheless, our duty to declare to the world, what we know to be the truth, that spirits, so far from being useful, are decidedly prejudicial to the labourer in all situations, both in hot and in cold climates. It is encouraging, by authority, a dangerous and sensual indulgence, which brings on all the evils of confirmed habits of intemperance, and an early death. "I have known many instances," says Dr. RUSH, "of persons, who have followed the most laborious employments for many years, in the open air, and in warm and cold weather, who never drank any thing but water, and enjoyed uninterrupted good health."* Dr. Moseley, who resided in the West Indies, uses this language in relation to the practice of drinking spirits in hot latitudes: "I aver, from my own knowledge and custom, as well as from the custom and observations of many other people, that those who drink nothing but water, or make it their principal drink, are but little affected by the climate, and can undergo the greatest fatigue without inconvenience, and not so subject to dangerous or troublesome diseases." Dr. Bell, also, states, that "rum, whether used habitually, *moderately*, or in excessive quantities, in the West Indies, always diminishes the strength of the body, and renders men more susceptible of disease, and unfit for any service in which vigour or activity is required."

Did our aborigines feel the want of any such a draught, to enable them to undergo the fatigues of the chase, or preserve their health to old age? Nay. But how has civilized man, who has been pretending to ameliorate the condition of these wild wanderers of the forest, destroyed thousands by the introduction amongst them of this intoxicating and poisonous beverage! If required for the support of strength, and the continuance of muscular exertion, surely the faithful servants of man, the horse and the ox, had more need of the bottle, than their masters. What says Dr. Franklin, for the encouragement of the industrious, to whom he has given so many practical lessons, in the instructive history of his life? He states, that, while employed in a printing office in London, he totally abstained from all fermented and spirituous liquors; and yet was able to carry up stairs double the weight which any of his fellow printers could carry, all of whom, to the number of fifty, drank an enormous quantity of stimulating liquors.

But we would not wish it understood, that we condemn all other drink than water; this would be infatuation. Men do not become drunkards upon wine, or fermented liquors. Confine them to these, and prevent entirely access to ardent spirits, and we do not fear the result. In all countries where wine is abundant and cheap, and the customary drink of the inhabitants, we see a temperate people. Who ever sees drunkards in France? Here, alas, how great the contrast! Where can we walk our streets, or travel upon the roads, without continually meeting the loathsome, bloated face of the self-destroying inebriate? "Is it not humiliating," says the late distinguished statesman and philosopher, the ex-president ADAMS, "that Mahometans and Hindoos should put to shame the whole Christian world, by their superior examples of temperance? And is it not (says he) mortifying beyond all expression, that we *Americans* should exceed all other eight millions of people on the globe, as I verily believe we do, in this degrading, beastly vice of intemperance?" We become so familiar with these daily spectacles, that they produce but little sympathetic emotion; but society cannot be relieved of the many burthens of poverty and distress, which fill our *poor-houses*, as well as the depravity and wickedness which crowd our prisons, without applying a remedy to their cause. It is in vain to attempt to counteract effects, whilst the causes producing them, continue operative. "The Managers of the Society for the Prevention of Pauperism in the city of New York," in one of their annual reports, make the following statement upon "Intemperance in Drinking:" "This most prolific source of mischief and misery, drags in its train almost every species of suffering which afflicts the poor. This evil, in relation to poverty and vice, may be emphatically styled the *cause of causes*." And in conclusion, they state, "that, viewing the enormous devastations of this evil upon the minds and morals of the people, we cannot but regard it as the crying and increasing sin of the nation, and as loudly demanding the solemn deliberation of our legislative assemblies." We need not say what is the resemblance to this picture in our own city.

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* See Dr. Rush's Inquiry into the Effects of Ardent Spirits upon the Human Body and Mind.

"Legislators," says Sir F. C. MORGAN,* "know no better expedient for the suppression of crime, than the exaggeration of punishment. If the dread of danger, or penal consequences, afford a stronger excitement than the temptation to crime, the most unprincipled villain will abstain from its commission; but give to that man an intoxicating fluid, which, by quickening the circulation, shall increase his courage, and at the same time hurry on his ideas, and obscure his powers of reflection, and the deed will infallibly be committed:" a very important consideration, which those who study the reciprocal influence of mind and body, should hold up to the view of such as pretend to control evil doers. What, we would ask, can avail the attempts of legislative bodies, to apply remedies to the increasing burthens of pauperism, and the prevalence of vice, if these be produced by the unrestrained indulgence in the use of ardent spirits? MONTESQUIEU has very justly observed, "there are two sorts of corruption, the one, where the people do not observe the laws, and the other, where they are corrupted by the laws; an incurable evil, because it is the very remedy itself."

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* See Sketches of the Philosophy of Life, by Sir F. C. Morgan, M. D.

The very interesting investigation into the subject of pauperism, which has of late years taken place in England, and the inquiry also, by a committee of the house of commons, into the police of the metropolis, all go to prove, how conspicuously like causes have produced like effects in that island. We have not room here to make an abstract of the disclosures upon which these facts are founded; but the whole development well deserves the perusal of every reflecting member of our profession, as well as of our legislators, and every person feeling interested in the public welfare.* The great progress made, of late years, in the cause of humanity, is indeed animating and encouraging, both to the statesman and philanthropist. "And the reason of this great advancement," says an English medical writer, when speaking of the amelioration in the condition of those confined in prisons, madhouses, &c. "has been the acknowledgment of the principle, that without knowledge to guide, and sense to regulate the feelings, the best intentions will be frustrated." "Humanity," says the same writer, "has in fact begun to be studied as a science, and no profession, we believe, has such opportunities of promoting the desirable change, as that to which we have the honour and happiness to belong. None has such opportunities of estimating the height, depth, and breadth of human misery; and none, may we not say, does more to alleviate it. The benevolent may form the most beautiful plan for the alleviation of human pain; the architect may construct the most beautiful edifice for the reception of human misery; but, unless both of them be equally founded on that practical knowledge of man, which our profession has such opportunities of acquiring, they will be equally futile and useless."

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* See Considerations on the Poor Laws, by JOHN DAVISSON; and ROSCOE on Penal Jurisprudence.—Also, several ably written papers upon the Report of the select committee of the house of commons, appointed to consider the poor laws, in the Edinburgh and London Quarterly Reviews.

Having the advantage of the lights and beacons which the experience of centuries past has placed before our eyes, how are we, on this side the Atlantic, where we boast so much of freedom and happiness, profiting by them? Are we not running on the same rocks and shoals, which have proved dangerous to others? At this enlightened day, and in this enlightened country, it is time for the introduction of those higher and better principles of legislation, which are calculated to prevent crimes, rather than punish for the commission of them. "Whilst the revenues of government are derived," says Roscoe, in his work on Penal Jurisprudence, "from the crimes of the people, it is in vain to hope that any efforts, either to reform their morals, or restrain their enormities, can be attended with success."

When there is danger of the introduction of pestilence and disease from abroad, by the commercial intercourse of nations, the members of the medical profession are appealed to for advice and counsel; their decisions influence the deliberations of legislative assemblies; quarantine regulations and health laws are enacted, which embarrass commerce, and subject to great inconvenience and pecuniary loss, thousands, who must submit without a murmur. And why should we not be consulted upon the means of shutting out this great source of disease and moral pestilence, *intemperance*, which most assuredly causes more deaths than all the quarantine laws prevent? If there is cause for the restraining power of the law, to protect us from the one source of disease and death, why not grant us the like guardian care in securing us from the other? Whilst weak and irresolute man has access to spirituous liquors, we can see no remedy for the deplorable evils they inflict upon him. It is only, as we apprehend, by total deprivation, we can restrain him from voluntarily surrendering himself to be destroyed by this deadly poison.

The utter hopelessness of the reformation of the habitual inebriate, a very striking and lamentable fact, must have often forcibly arrested the attention of every observing member of the medical profession. Some few solitary instances to the contrary have, perhaps, come within the knowledge of most; but what a sorrowful proportion do they bear to those who sink, the victims of their gross and degrading habits, loathsome to themselves, and to all around them! Who, amongst our medical brethren, have not seen numbers addicted to this vice often cease for a time from their habits of intemperance with remorse and disgust; but, alas, only soon to return again, to drown compunction in the bewitching bowl, which buries in oblivion the anguish it produces?

We have not kept a record of all the cases of habitual intemperance coming under our notice, but they certainly have not been less than some hundreds; and not one instance of permanent reform, to our knowledge, ever took place amongst them. It has been said, and, from a good deal of observation, we should say the statement is not exaggerated, that not more than one in five hundred of those addicted to this odious vice, ever reform; a consideration which has often appeared to us awfully alarming, and calling impressively upon those in authority, to guard these deluded objects of our commiseration from the pestilence they cannot resist.

Medical men, who are familiar with the laws which govern the animal economy, know how irresistible are the calls of the *stomach*. The inebriate, deprived for a time of his usual stimulus, soon feels the same craving anxiety for his accustomed draught, which is felt in the stomach of another, starving with hunger. What can restrain the powerful calls of the appetite for food, if access be possible to the means of its gratification? Just as irresistible, we are persuaded, are the demands of the stomach in the unhappy victims of spirituous potation. It is in vain to persuade them, it is in vain to reproach them; they are as deaf to religious expostulation, as to the threatened terrors of the law. If their comforting beverage is to be had, have it they will, at any sacrifice.

This inevitable fate, which awaits these deluded sensualists, and the great mortality which ardent spirits occasion, we are persuaded, the public are not sufficiently apprised of; but we hope this truth will be brought into their notice, again and again, till it obtains that solemn deliberation which it certainly demands.

We solicit of our medical readers, the serious consideration of this subject, not according to our imperfect representation of it, but as it is in its own nature and infinitely momentous consequences. The members of our profession may undoubtedly lend a powerful and much needed assistance to the friends of humanity, who have long laboured, with painful and discouraging solicitude, to lessen this great evil. We are under a two-fold obligation to hold up to view its awfully desolating effects, and assist in its removal; as physicians, bound to watch over the public health; and as good citizens, bound to promote virtue, and discourage vice.

The preservation of the lives and morals of millions yet unborn, if not the stability and duration of the government under which we live, may depend upon our efforts to awaken the attention of the public to a true sense of their danger from this cause. Enough is every day seen in our streets and highways, to excite alarm; but they who visit the haunts of the poor, and the bed-side of the thousands of inebriates, perishing every day from intemperance, throughout our country—they only can unfold to the view of our legislators, and those in authority, the real picture of sorrow and sadness which drunkenness exhibits. Let us not, then, neglect the performance of this part of our duty, but with patient perseverance, use all our influence to effect the utter banishment of those poisons, called distilled spirits, from our land.*

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* To exhibit, in one point of view, the influence of ardent spirits amongst the poor in Philadelphia alone, and we believe it is quite equalled in the cities of other states, and in some excelled, we will here make a statement of the number of paupers received in our poor-house, or alms-house, during the last five years; nearly all of whom, it is well known, are reduced to poverty, and obliged to seek this asylum, from habitual intemperance, either practised by themselves, or those who should support them at home. We will also state the quantity and the cost of the spirituous and other liquors used in the house during the same period; which will show what an expense the public incur, merely in what is thought to be the necessary stimulation of these poor inmates, to keep them alive; without counting any other cost.

From the 22d of May, 1821, to the 22d of May, 1826, there were admitted in the Philadelphia Almshouse, 65,065 paupers, making an average of 13,013 received in each year; of the whole number admitted in the five years, 28,435 were men, 29,041 women, and 7,589 children. During the same period, the managers, in their annual accounts, state, there were used in the medical and surgical wards, 3,993 gallons of ardent spirits, besides

ARTICLE VI.—*Case of Recovery from the Narcotic Effects of Opium, by means of Artificial Respiration.* By HUGH J. OGILVIE, M. D. of Madison, Morgan County, Georgia.

ON the 26th of September last, I was in attendance on Mrs. R. who had been delivered, ten days prior to my visit, of a strong and healthy child. From the rude and officious interference of the midwife, at the time of delivery, considerable injury, or abrasion of the meatus urinarius, had ensued; attended with retention of urine, and extensive inflammation, towards the termination of her convalescence. I prescribed an anodyne at bed-time, consisting of twenty-five or thirty drops of laudanum: through mistake, the dose was administered to the infant, whom I found in the following condition, on repeating my visit early the ensuing morning. Face of a dark, livid colour; respiration slow and oppressed, repeated about six or eight times a minute; pulse slow, weak, and tremulous; extremities cold; coma, and *dilated pupils*. I was informed, that it had had several convulsions a few hours after receiving the narcotic draught. I inquired if any thing had been administered, and was informed that it could not swallow. Not relying explicitly upon the assertion, I directed an infusion of coffee, and on attempting its administration, found the power of deglutition suspended.

Viewing the case as desperate, and beyond the ordinary resources of the profession, it occurred to me, from the peculiar state of respiration, that if that function could be sustained, the life of the infant might be saved. Accordingly, a female attendant was requested to close the nostrils, and blow into its mouth, and press upon the abdominal muscles and diaphragm, so as to carry

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wine, porter, ale, and cider, the cost of the whole of which is set down at 8,882 dollars and 57 cents.

Now, if spirituous liquors had not been accessible, "*that bane of human nature*, and most pernicious discovery ever made by art," as it is emphatically styled by the present Professor HOME, of Edinburgh, how different would have been the situation of most of these poor, unhappy dependents! How different, too, the demands upon public bounty! Society has long mourned over this cause of depravity; it is time to do more.

on artificial respiration. This was persevered in for half an hour, without much apparent amendment, except an occasional convulsive effort to expire the air blown in. Perseverance was enjoined, and in two or three hours, I was informed that respiration was completely re-established; the face assumed its natural colour, and all the functions were restored to their normal condition. No unpleasant symptoms ensued, and the child is now in the enjoyment of perfect health.

REFLECTIONS.

I was induced to adopt the practice instituted in the above case, from having noticed, in a periodical work,* a report of a similar case, by a physician in Boston, whose name I have forgotten. The case alluded to was unsuccessful, but the theory which suggested the remedy, was in perfect accordance with my own views. Opium in large quantities operates primarily upon the nervous system, and is mainly expended upon the respiratory and sympathetic ganglia. It therefore follows, as a necessary corollary, that if respiration can be sustained by artificial means, till the sedative influence of the opium has been subdued by the recuperative energies of the system, life may be restored. If my opinion of the modus operandi of opium be unscientific, or erroneous, the practical deduction may, nevertheless, be of service. These views, however imperfect, I hope may be the means of attracting the genius and talent of some one more adequate to its elucidation. Should a more extensive trial of the remedy be attended with success, we have another auxiliary that will tend to lessen the opprobria medicorum.

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* Vide vol. ii. p. 180, of this Journal, for the case related by Dr. J. **Ware**, of Boston, from the New England Journal for April, 1826. This practice was founded on the experiments and observations of the distinguished physiologist, Mr. **Brodie**.

ARTICLE VII.—*On the Treatment of Anchylosis, by the Formation of Artificial Joints.* A new operation, devised and executed by J. RHEA BARTON, M. D. a Surgeon of the Pennsylvania Hospital.

I BEG leave to call the attention of my professional brethren to the following paper, believing that it contains some new views, in relation to a deformity and lameness, hitherto, I think, excluded from the surgeon's list of curable complaints, and one of the opprobria of our art; I allude to a *firm, bony anchylosis* of the human joints.

It is well known, that no such deformity can be established, until the original natural structure of a joint shall have undergone an entire change. The beautifully polished cartilages tipping the articulations, which, when supplied with synovia, admit of such perfect movements over their surfaces, must previously be absorbed, leaving only the two rough ends of the bones to unite, and become incorporated, and, as it were, one bone. It is not surprising, therefore, that we should not have bestowed upon such defects a second thought, in reference to a cure; since parts once gone, cannot in living matter be replaced, as they may be in machinery of human construction. The restoration, therefore, of a natural joint, once destroyed, being impossible, what has always been our course to persons thus afflicted? It has been, to apprise them of their *irreparable* loss; leaving time only to reconcile them to a misfortune, entailed on them through after life. Having witnessed, about sixteen months ago, a most distressing instance of deformity and lameness, from an injury of the hip joint, it aroused me to much reflection on this subject, that eventuated in my adopting views, and a course of practice, which shall hereafter be detailed. I will relate the case referred to.

John Coyle, native of Philadelphia, twenty-one years of age, sailor on board the schr. Topaz, Captain Schyler, states, that on the 17th day of March, 1825, he fell from the hatchway into the ship's hold, upon the end of a barrel, a distance of about six or seven feet; that the force of the fall was sustained on the out side of his right hip; violent pain was the immediate consequence, and much tumefaction ensued; that after the injury, he arose with difficulty, and attempted to walk; thinks he made one or two steps, but was compelled to retire to his hammock, where he laid contracted for the space of about eighteen days; was then taken into Porto Cavello, and conveyed to the hospital. When lodged upon his bed, he placed himself on his side, with the injured limb uppermost, drawing the thigh to a right angle with the axis of the pelvis, and the knee resting on the sound side. In this posture he continued, without any material alteration, for the space of about five months; in the meantime, enduring all the suffering attendant upon a high degree of inflammation of one of the largest joints in the human body, and unalleviated by the support of splints, or a judicious antiphlogistic course of treatment. As might naturally be expected, a rigid and deformed limb was the result of such disease, combatted only by the administration of some simple liniment.

With regard to the real nature of the primary injury sustained, little can be said. The opinion on this point, of the medical attendant, under whose special care the patient was placed in the hospital, is not known. Dr. Murphy, surgeon general, who occasionally saw him, believed it to be a dislocation. On board of the Topaz, previous to his removal to the hospital, two physicians, belonging respectively to an English and French vessel of war, laying in port, inspected the limb, in company with the American Consul, Dr. Litchfield. Two of these gentlemen thought there was fracture; the French physician believed it to be some form of luxation. It is certain, therefore, from the difference of sentiment, that there was much obscurity in the case.

In October, 1825, Coyle returned to Philadelphia, having been sent home by our Consul.

Early on his arrival, he exhibited himself to me. He was then supported by crutches, having the thigh drawn up nearly to a right angle with the axis of the pelvis, and the knee turned inward, and projecting over the sound thigh; so that the outside of the foot presented forward. There was considerable enlargement round the hip, which so much obscured the case, even at this date, as to prevent me from forming any positive opinion as to the real nature of the original injury. From the fixed and immovable condition of the limb, it was impossible to ascertain whether, in a straight position, there would be shortening, and, if any, to what extent. The general feature of the limb bore *somewhat* the resemblance of that resulting from a dislocation into the ischiatic notch; yet the position in which the great trochanter stood, in relation to the superior anterior spinous process, discouraged such a belief. All things considered, I was rather inclined to the opinion, that there had been neither fracture nor luxation; but that the violence of the fall had produced an extensive contusion of the round ligament and joint, and that disorganization had followed the consequent inflammation. On this point, whatever might have been the nature of the accident, I thought I might feel assured, that *now* all articular movement was gone, and that true anchylosis had taken place. Trusting, however, to the fallibility of my judgment, and wishing, for the patient's sake, that it might prove erroneous, I was induced to admit him into the Pennsylvania Hospital, with the view of employing extension on the limb for some weeks, in hopes that its malposition might thereby be corrected. A perseverance, however, in this treatment, only proved the unalterable state of the hip-joint, and confirmed my early formed opinion. He subsequently fell under the care of my estimable friends and colleagues, Drs. HEWSON and PARRISH, in their respective tours of surgical attendance in the hospital, where we several times considered his case in consultation, and were united in our final decision, that any further attempts to release the joint would be useless.

Finding Coyle still in the hospital, a year after his admission, much reflection on his case led me to propose to my colleagues, the following operation, viz. To make an incision through the integuments, of six or seven inches in length, one half extending above, and the other below, the great trochanter; this to be met by a transverse section, of four or five inches in extent; the two forming a crucial incision, the four angles of which were to meet opposite to the most prominent point of the great trochanter; then to detach the fascia, and, by turning the blade of the scalpel sideways, to separate anteriorly all muscular structure from the bone, without unnecessarily dividing their fibres. Having done this, in like manner, behind and between the two trochanters, to divide the bone transversely through the great trochanter, and part of the neck of the bone, by means of a strong and narrow saw, made for the purpose; this being accomplished, to extend the limb, and dress the wound. After the irritation from the operation shall have passed away, to prevent, if possible, by gentle and daily movement of the limb, &c. the formation of bony union; and to establish an attachment by ligament only, as in cases of ununited fractures, or artificial joints, as they are called.

In this proposition, four material points presented themselves for consideration, viz. the practicability of the operation; the degree of risk to life, consequent thereto; the probability of being able to arrest ossific re-union; and the reasonable prospect of benefiting the patient thereby. The arguments I adduced in favour of such an operation, were these: That the anatomy of the part did not present any insurmountable obstacle to it. The fear of cutting into a joint was not to be entertained here, since, from previous disease, all the characteristics of a joint were gone; synovial membrane destroyed; cartilages absorbed; and an amalgamation of the head of the femur with the acetabulum, had taken place. That the shock to the vital system would not, probably, be greater than is frequently endured from accidental injuries, and other operations. That, if the opinion commonly assigned as the cause of the formation of false joints, after fractures, be true, such as frequent motion in the broken ends of the bone, a deficiency of tone in the system, &c. these agents could be resorted to with promising results.

In order to decide the important question, as to the benefit which the patient might reasonably be expected to derive from such an operation, it was necessary to consider how nearly a joint, thus artificially formed, would resemble, in its construction and functions, the natural articulation. What change the divided ends of the bone would undergo; whence would be derived its cartilaginous surfaces, its ligaments, its capsule, and its synovia; and, finally, what was to restrain its undue motions. My hopes of improving his condition, were founded upon the following facts and observations in relation to these points. That a bone, once divided, in a person otherwise healthy, must again unite, either by bone or by ligament; no case, to my knowledge, being on record, where a broken bone remained always afterward destitute of attachment between the divided extremities; except in cases where one of the fragments has been so small, or so scantily supplied with blood, as to be unable to contribute its part in the restorative process; being sufficiently vascular only to retain its own vitality, as in case of the separation of the head of a bone. If, therefore, ossific union should be arrested, ligamentous adhesions would maintain the connexion. Writers observe, and it is confirmed by my own experience, that when a fracture does not become consolidated, in the course of time, the rugged edges are removed by absorption; the separated ends become condensed, smooth, and polished, and tipped with a kind of cartilaginous substance; they are likewise inclosed within a sort of capsule. Observation has also proved to me, that this ligamentous structure, formed around and connecting the ends of an old fracture, is possessed of great strength; so much so, that I have, in several instances, witnessed persons sustaining the entire weight of their bodies on the ligaments of a false joint, requiring only lateral support to the limb. The freedom and latitude of motion, in such cases, and total insensibility to pain, after a sufficient lapse of time, I had also witnessed, and were encouraging arguments. In the operation here proposed, no such great strength of ligaments as will support the body, would be required; since, from the *transverse* section of the trochanter, bone will rest against bone, and strength in them sufficient only to prevent dislocation, would be necessary. From my inquiries into the manner in which this joint was to be lubricated, I did not expect that a synovial membrane and fluid, in all their characters, would be generated; but ample proofs were not wanting, of the immediate resources of nature in defending parts from injurious friction, in whatever point of the body it might be required, either by an exhalation from the adjacent structure, or by the intervention of a bursa. In the common false joint, where motion is discouraged as much as possible, sufficient moisture is there exuded to prevent painful attrition. It might reasonably be expected, therefore, that where motion was continual, the lubricating moisture would be more abundantly exhaled. In un-united fractures, the false joint is uncontrollable, because there are no muscles specially adapted for its restraint; but in the joint thus to be formed, *the will* alone must influence its movements; since nearly all of the muscles which exercised their control over the original joint, would be carefully preserved, to have a similar power over this; which is, in fact, a mere transfer of the point of articulation and resistance, from the head of the bone in the acetabulum, to the upper end of the shaft of the femur, against the great trochanter.

Although I did not think it essential to the melioration of my patient's condition, that the ends of the bone should at its section undergo any change, further than by the absorption of the asperities, I did believe, that nature would not passively witness my labours to effect what she has so often herself endeavoured, unaided by art, to accomplish; but that she would be ready to co-operate with me, and to extend to completion, that which human art alone would be incapable of—the formation of a new and useful joint, as a substitute for that which disease had annihilated, either by the conversion of the trochanter into a socket, or by some more wise design. Dissections of old luxations, and of fractures, near joints, present many ingenious and wonderful alteration of original, and depositions of new structure, to restore the functions and uses of parts impaired by accidents and disease. All authors notice these attempts at restoration. Sir ASTLEY COOPER, in his "Treatise on Dislocations and Fractures of the Joints," has particularly mentioned them, and given many interesting plates, illustrative of nature's unassisted achievements. Such circumstances strongly encouraged me in the experiment, and were considered as auguries of a favourable result.

These views were fully explained to my colleagues, and were accompanied by the assurance, that my patient had been fairly apprised of his present condition, and of the nature and intentions of the operation proposed; that he had not merely acceded to it, but that, after placing his sufferings, the difficulties, risks to life, the chances of failure, and the dangers eventually of aggravated lameness, in the strongest and most exaggerated light, he had expressed his willingness to endure any pain, or duration of suffering, and to subject himself to all hazards, for the remotest prospect of relief.

Accordingly, on the 22d day of November, 1826, assisted by Drs. HEWSON and PARRISH, I proceeded to the operation publicly in the Pennsylvania Hospital.

To a large medical class, and many respectable physicians, assembled, I again represented the nature of the case, and of the operation, and the views and course of reasoning which induced me to adopt it; stating, likewise, that I wished it to be distinctly understood, that a submission to my contemplated plans had not been urged upon my patient by any false or delusory promises; but that an explanation of his existing condition, and of the means proposed to be attempted for his relief, were fully made to him, in language adapted to his right comprehension of the matter, as well by my colleagues, as by myself; and that he had authorized me thus publicly to state, that he was prepared to assume all and the exclusive responsibility for the issue.

With this exculpation, therefore, the operation, as already detailed, was put into effect. The integuments and fascia being divided and raised, the muscles in contact with the bone, around part of the great trochanter, were carefully detached, and a passage thereby made, just large enough to admit of the insinuation of my fore-fingers, before and behind the bone; the tips of which now met around the lower part of the cervix of the femur, a little above its root. The saw (see plate, fig.) was readily applied, and, without any difficulty, a separation of the bone was effected. The thigh was now released, and I immediately turned out the knee, extended the leg, and placed the limbs side by side; by a comparison of which, in reference to length, the unsound member betrayed a shortening of about half an inch. This might have been caused partly by a distortion of the pelvis. Not one blood-vessel required to be secured. Union by the first intention was not attempted; the lips of the wound were only supported by adhesive plaster and slight dressings. The patient was put to bed, and Desault's splints were applied, to support the limb.

The operation, though severe, was not of long duration, it being accomplished in the space of about seven minutes.

In the evening, the patient suffered great pain, and was much prostrated; his pulse feeble, stomach irritable, with great restlessness. Opium, grs. ii. were given.

Nov. 23, (following morning.) Vomiting inordinate; had a bad night; pulse feeble and irritable; limb painful, particularly along the fore-part of the thigh; no nourishment retained. Prescriptions, during the day, opium and soda water; in the evening, opium and camphor, neutral mixture, sinapism over the epigastric region; which afforded him much relief. Some hæmorrhage from the wound.

24th. Irritability of the stomach much allayed—pulse still frequent and feeble. Examined the wound superficially—no union—lips of wound much swollen and everted—very painful. Prescriptions—opium, and cordial nourishment.

25th. Stomach improved—much pain in the bowels, which was relieved by a laxative enema. Opium and milk-punch given.

26th. Pulse very frequent and weak—wound not unfavourable. Poultice applied.

27th. Pulse as yesterday—not quite so much pain—approaching suppuration.

28th. Some pus secreted.

30th. Pulse frequent, but less irritation in it—wound suppurating.

Dec. 1st. Whole surface of wound covered with healthy granulations.

7th. Granulations vigorous and contracting—matter copiously secreted from the cavity of the wound, and from under the fascia over the rectus muscle. This discharge I ascribed to the forcible separation of the rectus muscle from its aponeurotic covering, to which I supposed it had adhered in consequence of previous inflammation, and during the state of quietude and contraction of the limb. Prescriptions—decoction of bark, cinnamon and serpentaria—milk-punch and opium continued—simple dressings to the wound—compress and many-tailed bandage to the thigh.

20th. Patient's limb and general health have been regularly improving, until this evening, when, from some indiscretion in diet, he was assailed by a most violent flatulent colic, which resisted all the ordinary and powerful remedies. At the suggestion of my judicious friend, Dr. Parrish, I resorted to dry syringing, and to this I attribute his relief.

21st. Somewhat exhausted by last night's indisposition—otherwise comfortable—wound cicatrizing—pus diminishing in quantity.

Jan. 20th, 1827. During the past month, no circumstance has occurred, as to the patient's general health, or the appearance of the wound, which deserved particular notice, except that the sore regularly diminished in size, and his strength increased. It must now be particularly noticed, that, in addition to the treatment already mentioned, after the twentieth day from the operation, the limb was cautiously moved in such directions as resembled the natural movement of the sound hip-joint; but in doing this, I was careful never to use such violence, to continue it so long at a time, or to repeat it so often, as to occasion any permanent irritation. A sufficient time was always allowed, for the patient to recover from the soreness of the last motions, before the limb was again disturbed. At first, it was necessary to allow an interval of several days between the movements, in order to obtain a subsidence of the soreness.

In the course of a short time, however, the part became more insensible to pain from this disturbance, and the limb was more frequently moved. During the last three weeks, the patient was requested, at my daily visits to him, to exert his muscles, in slightly flexing, extending, and rotating his thigh. This he accomplished without difficulty, and, after a little practice, without pain. As an auxiliary step, he was occasionally propped upright in bed, so that his pelvis might be at an angle with his thigh.

21st. It is just sixty days since the operation was performed. The wound having now entirely healed, and all appearances of inflammation gone, Coyle, with careful assistance, left his bed, and, aided by crutches, stood erect, both feet reaching the floor; he thinks he bore ten or twelve pounds weight on the weakened limb for a few minutes; made an attempt to advance the leg, and did so exclusively by muscular exertion; then rested on the sound side, and rotated the knee, and says, without pain. He was then placed in a wheeled-chair, and moved to the fire, where he sat, with both feet down, for about an hour; then retired to bed.

22d. Last night, the limb felt a little sore, from the exertion of the preceding day—otherwise well—considerable fluctuation discoverable along the direction of the rectus femoris.

23d. A quantity of synovial fluid escaped by a very small sinuous opening in the cicatrix, unaccompanied by pain, or other inconvenience. This discharge evidently came from the theca of the rectus femoris, and appeared to have been secreted in such superabundance, in consequence of the great excitement produced in this structure, after having been so long in a state of inaction—patient, in other respects, doing well.

24th. No synovia discharged—patient easy and comfortable.

25th. No particular change.

26th. Coyle arose, and with the assistance of crutches, made an attempt to walk. At this trial, he fairly used the weakened limb, alternately with the sound one, four or five steps in progression, and was then seated in his chair. In the course of the day, he repeated his attempt, and succeeded in walking, backward and forward, a room of ordinary size, using each limb alternately, and making fair and natural steps.

27th. Patient, in the presence of the medical class of the hospital, walked around the room several times; then held out his crutches, showing that he was capable of sustaining much of the weight of his body on the limb, without pain. On being asked, whether he felt as if he had, at the hip, solid support for his body, he answered in the affirmative.

28th. Improved in walking, and other movements of the limb, and in general strength—was able to stand alone, and firmly, without crutches.

29th. Improvement continued—stood without support at the bed-side, and arranged the pillows, &c. previous to reclining.

30th. Doing well.

31st. Patient dressed himself, and walked, with the assistance of his crutches, to the managers' apartment, a distance of about one hundred and fifty feet. Dr. HEWSON and myself now examined him particularly, to ascertain the muscular control he possessed over this newly formed joint. We found him able to perform flexion and extension, abduction and adduction, rotation inward and outward, and able to cross the opposite foot; he had, then, in fact, regained every movement which the limb originally possessed.

Feb. 8th. Patient's strength, local and general, has been daily recruiting. To-day, he walked about ninety or one hundred yards; and with aid, got into a gig, and rode to an extreme part of the city, a distance of about five miles; felt no pain, except at one or two unavoidable jolts; returned, and felt no fatigue.

12th. Improvement regular—stands alone, and without support—can walk with two canes only.

13th. During the night, my patient, whilst dreaming, gave his limb a violent twist; in consequence of which, I found him this morning in excessive pain, accompanied by a good deal of head-ache and fever—the thigh bore marks of approaching inflammation. In the course of the day, an erysipelatous blush, with tumefaction, was apparent in the vicinity of the joint, and on two or three insulated spots on the thigh. The limb was kept perfectly quiet, and lead-water applied.

14th. Fever much abated—erysipelas subsiding, but has caused the cicatrix slightly to ulcerate—no pain in the joint. Emollient poultice applied.

15th. Fever subsiding—erysipelas disappearing—no pain.

16th and 17th. Doing well—simple ointment substituted for poultice—inflammation gone.

18th. Patient left the bed, to resume his exercise—found himself much weakened by his recent attack, but no pain in the new joint—motions continue unimpeded.

19th. Patient up, and walking about—not yet recovered the strength which he had acquired previous to his erysipelatous attack.

24th. Patient has been daily walking about, and gaining strength.

March 1st. Since the last report, my patient has been rapidly gaining strength. His appetite is good. The ulcer, occasioned by the erysipelas, which, at no time, was more than a mere abrasion of the surface, and not in the slightest manner affecting the joint, may be considered as well. He sleeps soundly, either on his back or side. He arises in the morning, and retires not until night; in the meantime, amusing himself by exercise in walking, which he now begins to accomplish by the aid merely of a cane; time only seems to be required to enable him to walk without even this assistance. The following is the degree to which he can perform the movements of his limb with perfect ease: By measurement from a straight line, he can advance the foot twenty-four inches; in stepping backward, twenty-six inches; in abduction, twenty inches; in rotation inward, six inches, and outward, six inches.

ANATOMICAL CHANGES IN THE LIMB.

An entire destruction of the hip-joint; the head of the femur immovably fixed in its acetabulum by anchylosis; an artificial joint formed between the two trochanters and part of the neck of the bone; a quantity of dense ligament formed around and supporting this joint. The glutei medius and minimus, obturators externus and internus, and pyriformis, remain passive, and are of no further use, as their origin and insertion are at points, between which there is no motion. The interior portion of the quadratus femoris was left attached below the section of the bone; but it is probable, that its usefulness has likewise been destroyed by the alteration of structure, which these parts must have undergone in the formation of the new joint. The loss of these muscles is supplied by the action of those that originate above, and are inserted below, the artificial joint.

As the patient has regained every motion of the limb which he originally possessed, it is interesting to know what muscles have assumed the offices of those that have been lost. In my calculations, previous to the operation, I took the following view of this subject.

Flexion and extension, I supposed, would be performed by all the muscles which had those actions on the former joint, except the iliacus internus and psoas magnus; the power of these, as flexors, I feared would be lost, from the mechanical disadvantage under which they would act, owing to their insertion so near to the part to be moved. Rotation outward would, in future, be performed by the action of the iliacus internus and psoas magnus; rotation inward, by the tensor vaginæ femoris; abduction, by the simultaneous action of the tensor vaginæ femoris and gluteus maximus; adduction, by the triceps adductor; and circumduction, by the alternate action of all the muscles of the thigh. This I believe to be the present state of muscular influence.

Upon examining for the space that usually exists between the projection of the great trochanter and the posterior margin of the acetabulum, it will be discovered that it has been filled up by an accumulation of osseous matter, apparently deposited there to prevent displacement of the bones, and to form something like a socket.

The outward contour of the hip resembles that of the sound side, except in the disfigurement occasioned by the extensive crucial incisions.

When the legs are extended, a slight shortening of the right limb is perceivable, but not sufficient to cause him to limp in walking. The thickness of the blade of the saw, taken from the length of the femur, and the subsequent change of the divided surfaces, might have caused this retraction of the limb. When the knees are drawn up, there is an increased shortening, which again disappears as they are extended. By placing the hand over the upper part of the trochanter, and moving the limb, that portion of the bone will be found perfectly at rest; but when the hand is lowered to the part where the joint has been formed, the articulation is satisfactorily felt. The sensation conveyed to the hand is not like that occasioned by two bare surfaces of bone rubbed against each other, but like that imparted by the motions in a natural and healthy joint.

Having now established the fact, that an artificial joint can be substituted for the loss of the natural articulation at the hip, it becomes a matter of importance, to ascertain how far the same principles are applicable to the formation of new joints in other parts of the body, where natural motion has been lost. My reflections on the point, have not presented any forbidding circumstances; but it is not in every joint, that the loss of motion would be sufficiently important to call for the aid of a painful operation. The most serious evil is sustained by the loss of the hip, knee, shoulder, elbow, great toe, and finger joints, and of the lower jaw; and these, I believe, may all come within the reach of amendment by an operation, if the muscles which move these respective joints are in a sound and efficient state. If they have been lost, it would be palpably wrong to form a joint, since its unrestrained motion would be more troublesome than a rigid limb. A transverse section of the bones would be proper, if the operation were to be attempted at the shoulder, knee, fingers, or toes; but an angular division would be necessary at the elbow, in order to preserve some resemblance to the natural joint at this part. I have, therefore, given in the plate, a sketch of an anchylosed elbow, in the straight and angular position, and the manner in which the section would be most advantageously made.

I hope I will not be understood as entertaining the belief, that this treatment will be applicable to, and judicious in, every case of anchylosis. I believe the operation would be justifiable *only* under the following circumstances, viz. Where the patient's general health is good, and his constitution is sufficiently strong; where the rigidity is not confined to the soft parts, but is actually occasioned by a consolidation of the joint; where all the muscles and tendons, that were essential to the ordinary movements of the former joint, are sound, and not incorporated by firm adhesions with the adjacent structure; where the disease, causing the deformity, has entirely subsided; where the operation can be performed through the original point of motion, or so near to it, that the use of most of the tendons and muscles will not be lost; and, finally, where the deformity, or inconvenience, is such, as will induce the patient to endure the pain, and incur the risks of an operation.

EXPLANATION OF THE PLATE.

Fig. 1. Represents the condition of the patient previous to the operation.

It will be observed, that the distortion of the limb was so great, that the cripple's shoe which he wore, did not supersede the necessity for crutches; but that its tip only reached the ground, when the ankle was extended.

Fig. 2. Is explanatory of the alterations in the bony structure, first by disease, and subsequently by the operation.

a. Two faint lines, representing the direction of the femur, in correspondence with the thigh, in fig. 1.

b. The head of the femur, and acetabulum; all motion between them arrested by anchylosis.

c. The point at which the bone was transversely sawn through, and the triangular gap at the section, occasioned by bringing down the thigh.

d. The femur, restored to its natural position after the separation of the bone.

Fig. 3. The saw used for dividing the bone; the blade about six or seven inches in length, and thinner on the back than on the edge; the end smoothly rounded off, to avoid piercing parts before it; teeth widely set.

Fig. 4. The elbow-joint anchylosed at a right angle; the line represents the direction in which the bones might be divided by a long and narrow saw.

Fig. 5. Anchylosis of the elbow-joint, with the bones in a straight line, showing the manner in which the section might be made when the limb was thus fixed.

Fig. 1

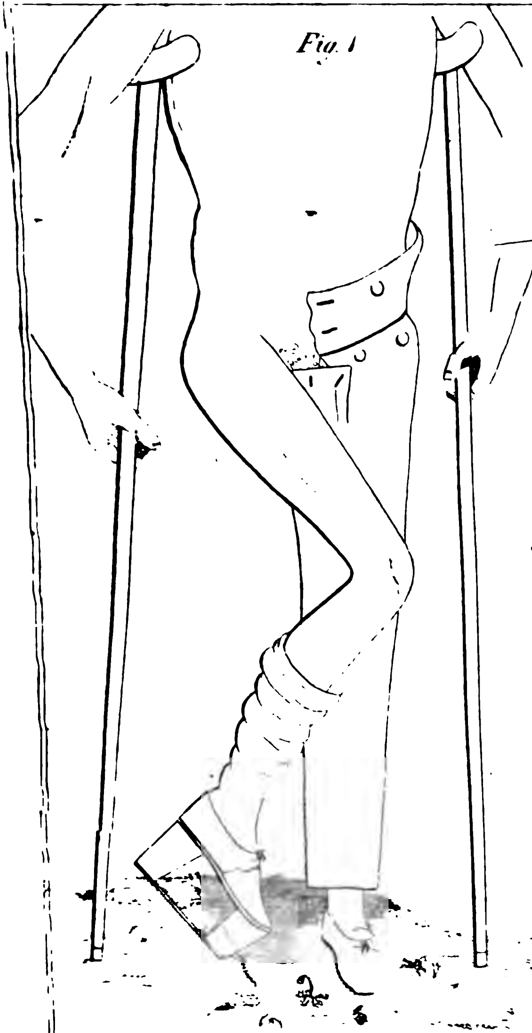
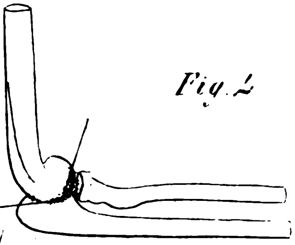


Fig. 2



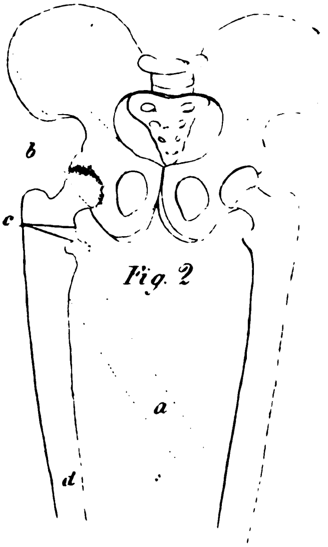
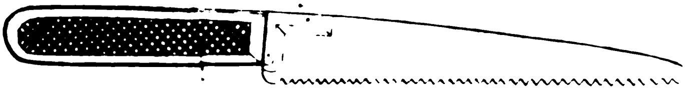


Fig. 5

Fig. 3



J R Barton Del

ANALYTICAL REVIEWS.

ARTICLE VIII.—*A Treatise on the Diseases of Females.* By WM. P. DEWEES, M. D. Adjunct Professor of Midwifery in the University of Pennsylvania, &c. &c. Philadelphia. H. C. Carey & I. Lea. 1826.

THE appearance of a work by Dr. DEWEES, on the diseases of females, cannot fail to be hailed with much pleasure by every physician in America, as we are naturally led to anticipate much practical information from him, on subjects in which he has had a great deal of experience. This is the third or fourth volume with which this gentleman has favoured the profession, within the last three years; a circumstance which, itself, is a sufficient proof of the facility with which he writes. We are aware, that with many, this copiousness and rapidity are no recommendation; and we must confess, that, from what we have seen, we are inclined to the belief, that in general, the opinion is not unfounded; yet, in the present case, we think, that notwithstanding some defects, which we are willing to attribute to haste, the present work will, as a practical one, command great attention, not only from students, for whom, we believe, it was intended, but also from the general practitioner.

Before undertaking an analysis of the volume before us, we must beg leave to remark, that although no one entertains a more exalted opinion of Dr. DEWEES's skill, as an accoucheur, or as a general practitioner, than ourselves, we are not prepared to regard all his pathological views as placed beyond the reach of criticism. On these, therefore, he cannot be offended that we should differ from him, and express our opinion relatively to the points in which, we think, he has erred. This, indeed, is a privilege we should not feel very willing to relinquish on any account,—whatever may be the standing of the author whose opinions we are examining. On the present occasion, we assume it with so much the more confidence, as "a just criticism is more welcome to a true philosopher, than the highest seasoned praise; the former promoting truth, the latter prejudicing it."

After a few preliminary observations on the peculiarities of the female system, Dr. DEWEES makes the following remarks on the subject of the predominant temperament of the sex.

> "The peculiarities which we have thus briefly pointed out, necessarily render the female constitution one of marked and distinct character. The assemblage of the differences which constitute it, renders it, in general terms, one in which the solids are less dense and resisting, more relaxed and flabby, owing, probably, to the predominance of the cellular and nervous systems. The lymphatic system is more extensive than the sanguineous; which, it is supposed, gives to the female a greater quantity of fluid, than to the male.
>
> "To these causes, or rather circumstances, is attributed the formation of the predominant temperament of the female constitution; namely, the sanguineous temperament; so much insisted on by ROUSSEL, and agreed to by VIGAROUS."

It is plain, that in this our author has followed very closely, and that too without much reflection, the last named author, who makes the *sanguineous* temperament of females consist in the greater quantity of cellular tissue, and the consequent softness of the organs, the predominance of the lymphatic system, to which he adds the excessive action of the nervous system, as well as the influence of the sexual organs, and principally of the uterus. We have said, without much reflection, because he might easily have found much better guides on the subject of temperaments, than VIGAROUS; and by adopting his views, has involved himself in a great inconsistency. Thus, by some attention to what the best writers on the subject mean by temperaments, it is not difficult to find that no one of these can be denominated sanguineous, which is marked by a predominance of the lymphatic over the sanguiferous system. That the first of these systems does, in general, prevail more extensively in the female than in the male sex, is a fact which we do not wish to deny; but that even in women of a sanguineous temperament, it is in greater excess than the sanguiferous system, is a thing which would have puzzled VIGAROUS to prove, and which Dr. D. is very far from having demonstrated. We have said, that Dr. D. by following too closely VIGAROUS, has involved himself in an inconsistency; and in order not to be accused of making a groundless assertion, we take the liberty of extracting a short passage from a paragraph, in which he speaks of the lymphatic system of females.

"There is no peculiarity, perhaps, in it, except the lymphatic vessels are more numerous; and when they have a certain predominance, they constitute a temperament; and then, unfortunately for the possessor, it but too certainly becomes the seat of terrible, and often times incurable, diseases."

It is evident, that allusion is here made to the lymphatic or scrofulous temperament; now, how the predominance of the lymphatic system in this case, can serve to characterize the latter temperament, and, on the other hand, can exist over the sanguiferous system in the sanguineous temperament, is a thing which it will be difficult for Dr. D. to reconcile to the perfect satisfaction of all his readers. But this arose, we repeat, from following too closely Vigarous; for Roussel understood the sanguineous temperament of females very differently from the latter, regarding it as the effect of the predominance of the sanguiferous system, combined, however, with a softer condition of the cellular tissue.

Dr. Dewees does not feel disposed to attribute to the uterus the degree of influence which, by many, it is supposed to exert over every part of the body,—creating, aggravating, and modifying disease in every organ. Wishing, however, to convey his meaning in the clearest manner possible, he makes the following remarks, which we think sufficiently interesting to be transcribed here.

"First. We have ever found the unoccupied uterus to be one of great passiveness, when in a state of perfect health; and that, so long as it preserved this condition, it manifested no agency in the production of a disease, or in modifying it, if present. Thus, fever, inflammation either local or general, or spasm, has never appeared to us to derive advantage, or suffer inconvenience, from the influence of this organ.

"Second. That when in a state of disease, we have found several parts of the body sympathize with the uterus, as the stomach, the head, the breast, &c.: but precisely the same thing can be said of other parts of the body; for neither of which is such influence admitted as is claimed for the uterus. Thus, the brain, the stomach, the kidneys, the liver, &c. when in a diseased state, will have particular parts deranged, by a sympathetic influence; yet it has never been asserted, that either of these parts had, at any other time, or under any other circumstance but disease, any agency in producing or modifying disease in any other portion of the body.

"Third. While the uterus is performing one of its functional duties, namely, forming the menstrual blood; when it is known to be in a state of excitement, and decidedly engorged with blood; a time when it would most likely exert an influence, if it really possessed any, we never find this organ betraying a power over other parts, so long as the functional process is carried on healthfully; and that, during this period, we have hitherto not been able to detect the slightest influence over any disease, that may have been present in the system; nor has it ever made us vary a prescription, or modify a treatment.

"Fourth. That when the menstruous function is performed with pain and difficulty, other portions of the system are found to suffer from sympathy; but in no greater degree, than these very parts have been known to suffer, when some other organ was the source of irritation. In dysmenorrhœa, we have known the back and stomach suffer severely; the first by pretty intense pain, the second by severe vomiting; but we have seen the same consequences attend an irritated kidney, or an inflamed neck of the bladder.

"Fifth. That, when this organ is labouring under severe disease, as inflammation, scirrhus, or cancer; where all its ordinary functions are either deranged, perverted, or suspended, and this for a long period together, we do not find that it involves the system in any severer penalties, than any other equally important viscus would do, under similar circumstances.

"Sixth. That when its functional powers are irregularly and imperfectly performed, or altogether suspended, by some derangement or power, if the general health suffers from this cause, it is not because the uterus has any superior power to effect this; but because one of the links is broken, (and we are willing to admit it to be an important link,) whereby the chain of healthy functions is maintained. A similar condition of any of the other viscera, would be followed by the same consequences.

"Seventh. That when the uterus is impregnated, various other portions of the system are deranged, in consequence of their strong sympathy with this organ; but even here, the complaints are not sui generis; for every one of them can be, and have been very often, simulated from other causes. The whole phenomena of impregnation are so well understood, as not to require reciting; but has not almost every body witnessed the whole train of these morbid sympathies to arise from very different causes?"

In a few succeeding chapters, Dr. Dewees treats of the diseases of the external and internal organs, commencing with the tumours and excrescences which occasionally appear on the external parts. We have only room to remark, that when the excrescences are in the form of warts, and very numerous, Dr. D. has succeeded in removing them, by keeping the parts very dry, and exposing them as much as possible to the air.

After treating of the diseases of the clitoris, of the adhesion of the labia pudendi of children, of the imperforation and too great density of the hymen, and after offering a few remarks on the diseases of the vagina, Dr. DEWEES comes to those connected with menstruation, which he prefaces by a long chapter on the history of this important function. After occupying three or four pages in refuting the opinion of ROUSSEL, that the menstrual is not an original function, but the result of civilization,—an opinion, which, so far as we know, no one, with the exception of EMMET, has ever thought worthy of adoption, our author remarks, that it is essential to propagation, that the internal surface of the uterus be in a healthy condition, manifested by a healthy catamenial discharge; "or, in other words, only when the quantity and quality of the menses are free from objection, and the ovaries free from imperfection." It is plain, therefore, that in his opinion, and, we believe, in the opinion of every intelligent physiologist, menstruation, when healthy, is, in general, a sign of fertility, unless there be a deranged state of the ovaria. On this subject, Dr. D. makes the following remarks:

> "It may, therefore, be considered as highly probable, that the absence of the capacity to be impregnated, will sometimes depend upon the imperfect condition of either the uterus itself, or of the ovaries. If the former, it may consist in some derangement of the secreting surface of the uterus; and though there may be a regular discharge of a coloured fluid, and this so nearly resembling the perfect secretion as to deceive the senses, it may yet want an essential condition or quality, and thus entail barrenness; hence, all women are not fruitful, who may have a regular catamenial discharge; though, as far as can be judged of by appearances, this discharge is every way healthy, and at the same time the ovaries free from fault.
>
> "Nor is this perhaps difficult to explain, or rather to imagine how this may happen. I adopt the opinion, that the menstrual discharge is a genuine secretion; and that the internal face, or lining, of this organ is the portion which furnishes it: now, it will be evident, that whenever this part is in any way deranged, its product must be impaired; but the injury does not consist so much in the imperfect elaboration of the menstrual fluid, as in the inability of this surface to furnish a healthy decidua after impregnation has taken place; for there can be but little doubt, that the same apparatus furnishes both one and the other. This condition of the uterus, I have reason to think, is not of frequent occurrence; an ovum may be fecundated, and

duly conveyed to the cavity of the uterus, but it is suffered to perish there, from the want of a healthy decidua: it is therefore cast off unperceived, at the next menstrual purgation, and the woman is relatively barren."

Dr. D. does not adopt the opinion of some writers, who maintain, that impregnation has sometimes taken place before the inception of the menses, as well as after their final cessation. He thinks, that in the former, the discharge of blood was preceded by a flow of serous fluid, which was overlooked by the physician; and that in the latter, an effort had been made by the system to restore the catamenial flux by a periodical serous discharge. A few interesting cases are given in support of this opinion, which we regret our limits will not permit us to transcribe here. Nor can we stop to notice the reasoning which Dr. D. offers in corroboration of these facts; for, although we view it as *plausible*, yet it is too conjectural to occupy our attention in this place.

As may have been seen from the above extracts, Dr. DEWEES regards the menstrual flux as the result of a secretory action of the lining membrane of the uterus, and not as pure blood. His reasons for entertaining this opinion have been long before the public, and are as follow: 1st. The colour of the fluid discharged is between that of the arterial and venous blood, being less brilliant than the former, and more florid than the latter. 2d. The first never separates into parts; whilst, on the contrary, blood drawn or evacuated from any other part of a healthy body, separates in a short time into its component parts. 3d. It never coagulates, though kept for years; while other blood, when free from disease, quickly does, when exposed to the influence of the air. 4th. Its odour is remarkably distinct from that of the circulating mass, and it is less disposed to putrefaction. This opinion, as may be seen, differs widely from that of many of the best writers of the day; who, although admitting, that the blood discharged during menstruation presents, in general, a few differences from that circulating in the vessels, nevertheless, consider the discharge as a modification of hæmorrhage. But although this is the generally received opinion, it does not follow, that the one adopted by Dr. D. on the subject is original with, or claimed by him. In this and other chapters, Dr. D. asserts, that the contrary view has been handed down from the time of HIPPOCRATES, "without inquiry or dispute;" that GARDIEN regarded it as an hæmorrhage in mere compliance with a preconceived notion, "founded on no better ground than the weight of authority;" and that this opinion has been *copied* into almost all the books since the time of HIPPOCRATES. That the first of these assertions is not well founded, may be proved by our author's own admission, that "HALLER, BORDEU, SANDERS, JOHN HUNTER, &c. called menstruation, without hesitation, a secretion;" by two quotations he makes from RAMMAZINI, and his translator, FOURCROY, proving, that they both held the same language; and by his remarking that, from the manner in which this doctrine is mentioned by RAMMAZINI, it is plain it was not new when he wrote. Without the fear of contradiction, it may be affirmed, that no doctrine can, in justice, be said to have been received without "inquiry or dispute," which can enumerate among its opponents such a mass of authorities as the one the doctor has himself brought forward. Nor do we believe Dr. D. has evinced his usual liberality in the rest of his remarks and assertions, taxing, as he does, GARDIEN, and other accurate and close observers, of adopting and *copying* an opinion, without a due examination of the reasons on which it is founded; and that too, although a contrary opinion is to be found advocated in works of the easiest access. But, even supposing that GARDIEN was susceptible of this blind attachment to ancient authorities, the same accusation cannot, with any semblance of justice, be brought forward against a BICHAT and a BROUSSAIS, who assuredly are as much entitled to the appellation of *original observers*, as any author with whom we are acquainted; and yet they both advocate, in the most positive terms, the hæmorrhagic nature of the menstrual discharge!

Dr. D. very properly adopts the opinion of those who consider the uterus to be lined by a membrane of the mucous kind; and, after making a few remarks on the ancient belief of the deleterious qualities of the menstrual fluid, he adds,

> "It must be admitted, that this secretion is acrid occasionally, and will leave traces of its acrimony upon the parts over which it flows; but when this happens, it must be recollected that this discharge is in a deranged state, and no longer a pure menstruous evacuation. This occurs more frequently towards the decline of life, and especially if there be a tendency to cancer. It must, however, be recollected, that even in such instances, the general system is not contaminated in the commencement of this condition of the uterus: the acrimony of the discharge results from an altered action

> of the vessels concerned in the process of elimination, and exposure to the air; and it is not until portions of this discharge are absorbed, or until the system at large sympathizes with their diseased parts, that any evidence of the uterine affection is betrayed by the skin, or other parts becoming diseased."

The two succeeding chapters, from p. 65 to p. 117, on deranged menstruation, being copied, with very little alteration, from the author's System of Midwifery, which has already been before the public more than two years, we do not think it necessary to analyze them here; and, therefore, pass to the examination of a few sections in chapter ninth, on diseases of pregnancy, which, so far as we know, are here published for the first time.

Dr. D. states, that, in his opinion, pregnancy is not necessarily a disease in itself; but that it frequently induces this condition in other organs of the body, by means of what he denominates a strong sympathetic feeling.

> "As an arrangement of nature, the uterus, being occupied with the rudiments of a new being, cannot with propriety be said to be in a morbid condition; on the contrary, it is essential to the object of this condition, that it preserve almost inviolate its healthful integrity. For if it become diseased, in the strict meaning of the word, the intentions of this condition will almost to a certainty be prostrated. It therefore has decidedly the power of exciting other parts to diseased, or, at least, to deranged action, while it preserves itself in the most healthful state. Indeed, the healthful condition of this organ seems necessary to its power of calling other parts into sympathy, either morbid or salutary." "This is abundantly proved by the fact, that the process of gestation goes best on, as a general rule, where certain, or what are called the rational, signs of pregnancy are present, and even in full force; such as nausea, vomiting, salivation, heart-burn, swelling of the breasts, &c. &c. consequently proving it to be in a healthful condition."

In this, Dr. D. differs widely from Dr. Rush, who regarded pregnancy as an inflammatory state approaching to disease, and from the best Italian and French pathologists of the present day, who consider the uterus, during this state, to be in a state of inflammatory irritation. For our part, we must confess, that we are more and more inclined to adopt this view of the subject, as it is otherwise difficult to account for the attraction of blood to the uterus,—the growth of this organ,—the formation of the decidua, which is nothing more than coagulating lymph, and is formed in cases of extra-uterine pregnancy; and also the inflammatory condition of the blood drawn in this state. Nor can we well understand how an organ, in its healthful state, can excite so many sympathetic derangements; and that too, as maintained by our author, in proportion as it approaches to a state of perfect health. This position seems to us to be contradicted by every phenomenon which is observed in the normal or abnormal condition of the system,—organs, in their quiescent state, exciting but few sympathies; whilst, on the contrary, they derange a number, and even all the organs of the body, when in a state of irritation. The uterus itself may serve to illustrate this, for we find many women enjoying good health, during the intervals of menstruation, who become very distressingly affected, so soon as the uterine periodical irritation has returned. In chronic, and even acute, affections of the uterus, and in some cases of amenorrhœa, many of the sympathetic disturbances which are enumerated as signs of pregnancy, are sometimes present; and surely no one will assert, that they are violent in proportion as the uterus approaches to a state of health. We think it may safely be affirmed, therefore, that the sympathetic affections noticed during pregnancy, are evidence, not of a healthy or normal condition, but of a state of irritation of the uterus;—an irritation, which, unless carried too far, is necessary for the regular performance of the new functions which the uterus is called upon to execute, as well as for its growth and regular supply of blood. We agree with our author, that these various sympathetic affections are intended to divert all evil from the uterus, in order that the great object of nature, (the propagation of the species,) should not be circumvented with too much facility; but we believe, that they do this, by revulsing irritation from the uterus, and not, as believed by him, by preventing plethora.

From these remarks, it will appear evident, that, in adducing the following, as the causes of the state of stimulation in which the system is kept during pregnancy, Dr. Dewees has overlooked the irritation of the uterine system during that state.

"*First*. There is the stimulus of distention constantly operating, from the first six weeks, to the full period of utero-gestation. This is most obvious in the first few months, and for this reason, that at this period, the uterus yields with more reluctance than at any subsequent period, either from its own specific density, or from the smallness, as well as feebleness, of the distending cause, the ovum.[*] Hence, in the first few months of pregnancy, the sympathetic affections are more violent than in the after periods. *Secondly*. Joined to the stimulus of distention, is that disturbance, which is, and must be, consequent upon the changes of position, of all the abdominal viscera, which sometimes is very considerable. *Thirdly*. The constant, though not uniform, pressure upon the intestines, both above the fundus, and below its posterior and lateral portions; giving rise sometimes to many unpleasant symptoms, such as cramping pains, from the unequal distention of the bowels, constipation, diarrhœa, &c."

From this state of excitement, arises the danger of stimuli in pregnant women, and the want of success, generally encountered, in curing intermittent fevers in them with bark, unless the exhibition of this remedy has been preceded by ample depletion.

The following remarks, on the use of bleeding, purging, &c. in pregnant women, are entitled to great attention, as few physicians, in this or any other country, have had as much experience in such cases as Dr. Dewees.

"There is much prejudice connected with the depletion of the pregnant woman. This is sometimes so great, as to render it extremely difficult to subdue their diseases. This prejudice, for so it truly is, is founded upon false views of the functions of the uterus, and the economy of the fœtus, during the period of utero-gestation. It is imagined, that for every ounce of blood the mother loses, the fœtus is deprived of a certain portion of it; consequently, that we should be very sparing of this fluid, that we may not deprive the fœtus of its due proportion of nourishment. On this account, the clamour of friends frequently arrests the lancet, when its aid is most essential to the welfare of the mother.

"There are few errors of greater magnitude, than the one just noticed; and, though it is based in error, yet it has, nevertheless, much concern with the free and unbiassed practice of medicine. It very often causes the young practitioner to abandon some of the best established principles in the practice of his art; namely, that women bear the loss of blood better when pregnant, than at any other period; and that all the acute diseases by which they may be attended, require a more extensive use of the lancet." "We have known much mischief produced by the exercise of these mistaken views of the animal economy."

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[*] There is every reason to believe, that the uterus, and, therefore, its cavity, is not enlarged solely by the distending power of the ovum; as in cases of extra-uterine pregnancies, it has been known to be much larger than in the natural state, and to be lined with the decidua. Nor is it correct to assert, that the greater sufferings of the woman, in the early periods, depend on the stimulus of distention being greater at that time; as in some individuals, these sympathetic affections appear, before we have any proofs of the ovum having reached the uterine cavity.

On the subject of purging, he remarks,

"The pregnant woman does not bear purging so well as the woman who is not so; or, rather, if this operation be carried very far, there is a risk of producing abortion, owing to the strong consent between the uterus and rectum. Hence, the occurrence sometimes of this accident from a profuse diarrhœa, or a violent dysentery. Some caution, then, is required, in treating the diseases of pregnant females by purging; for, if carried to a great extent, it may do mischief. But, let us be understood exactly on this head, lest we deprive females of the advantages of this remedy, in the acute forms of disease. We mean, that a pregnant woman would not bear, without the risk of abortion, as much purging as she could if she were not pregnant; yet, she bears it with advantage, when carried to a considerable extent, especially if tenesmus be not excited, either by the quality of the drug employed, or by the accidental severity of the operation of a medicine generally eligible. In a word, we believe that the pregnant woman will bear, without risk, any common or necessary degree of purging, unless she is prone to abortion.

"We suggest a caution in the choice of purgative medicines, rather than in the employment of this evacuation as a remedy; for in them, with the pregnant woman, there is a great choice. All such as act with great force upon the bowels should be avoided, as well as all such as are classed among the drastic purgatives, as scammony, gamboge, colocynth, aloes, &c.; because all these produce, during their operation, great irritation in the rectum, and excite frequently tenesmus. It is this peculiar irritation, which renders unsafe any cathartic that may produce it, no matter to what class of cathartics this may belong; for, if castor oil, magnesia, or any other mild medicine, were to produce this effect, it would be equally improper to employ it, as any of the drugs prescribed above."

On the subject of emetics, we find the following remarks:

"Emetics should be given sparingly to pregnant women; they are rarely eligible after the fifth month, and should only be considered as remedies of necessity. Towards the last months of pregnancy, their operation is oftentimes uncertain in properly or freely evacuating the stomach, as this organ can be very little aided in its efforts by the other powers concerned in this operation; and from the parieties of the abdomen being greatly upon the stretch, much pain is experienced in their contractions, during the efforts to vomit, followed sometimes by severe cramping pains. We have known much and permanent pain produced, by the exhibition of an emetic at the last period of utero-gestation; and from which the patient was not entirely relieved, until the termination of her labour."

Blisters, Dr. D. observes, are to be used with great caution with pregnant women; as, owing to the great excitability of their systems, they produce considerable pain, are not always followed by the desired degree of relief, and are much more apt to produce strangury, than at other times.

On the subject of the "febrile condition of the system during pregnancy," Dr. Dewees enters somewhat at large, and shows, we believe conclusively, that the crust observed on the blood drawn in that state, does not differ from that noticed in inflammatory diseases. Like Dr. Denman, our author supposes, that this state of the arterial system and blood is intended to answer some important purpose to the child, and ventures an explanation of the manner in which this is effected; but, as this explanation is really, as he calls it himself, a "conjecture," and as it is founded on a theory respecting the nourishment of the fœtus, which, though ingenious, is very far from being proved to be correct, we shall not stop to examine it here, but pass to the treatment proposed by our experienced author, for the febrile condition.

> "A few ounces of blood abstracted from the arm, a vegetable diet, and keeping the bowels open by any of the mild purgatives, will be found sufficient for the immediate removal of this state of the system. If acidity prevail, magnesia will be the best purgative we can employ; if there be no acidity, pills of rhubarb, castor oil, seidlitz powders, sulphate of magnesia, or flowers of sulphur, will be found best. All stimulating substances should be carefully avoided; every kind of liquor should be prohibited—water alone should be the drink."

> "Errors in diet are almost constantly committed during pregnancy, than which few things are more mischievous. We have already adverted to the tendency there is to plethora, during this condition of the female; on this account, it cannot fail to be injurious to overcharge, or to over stimulate, the stomach. No one circumstance has contributed so certainly to fix this error, as the vulgar speculation upon this subject; namely, the necessity the female is under to prepare nourishment for two beings, at one and the same time; herself, and the child within her. It is, therefore, constantly recommended, to eat and drink heartily; and this she too often does, until the system is goaded on to fever; and sometimes, to more sudden and greater evils, as convulsions, or apoplexy."

On the subject of "inquietude and want of sleep," Dr. Dewees remarks,

> "We believe, that this inquietude arises from that peculiar irritability of the nervous system, which seems to constantly attend upon a *fulness* of the

system, rather than on a deficiency of blood. In proof of this, the pulse is always quickened and full in the evening, and during the night; and it is a true exacerbation, or febrile paroxysm, which spends itself by morning, and permits the patient to sleep at that time. Again, bleeding, purging, low diet, cool air, and cold water, are the best remedies for this complaint." "We never prescribe opium in any form, unless the necessity is very urgent, and when bleeding and the other remedies have failed; and when we do order it, it is always in small doses. We prefer the acetated tincture, or black drop, to any other form of opium; of this, we give ten drops only at first; and if it does not tranquillize in two hours, we direct five drops more; believing, if this quantity does not succeed, a larger quantity will not; we therefore never urge its use."

With the treatment here proposed for this complaint, no one, we believe, who has had to treat it, will feel disposed to be displeased; but we cannot say, we are perfectly prepared to admit the correctness of the theory upon which it is predicated. Thus, it is a subject of notoriety in pathology, that, unless the effect of local irritation, the irritability of the nervous system, or, rather, of the nervous centres, increases in proportion, not to the *fulness* of the blood-vessels, but to the debility of the system; and that *fulness* of the vessels never produces fever, independently of local irritation. If, therefore, in the cases before us, there are evening febrile paroxysms, they indicate plainly that some local intermittent irritation, involves sympathetically the heart and brain,—accelerating the pulse, and producing that state of erythismus of the nervous centres, which increases the irritability of the nerves, and gives rise to that inquietude and inability to sleep, characterizing the complaint,—a local irritation, which may co-exist with, and even be increased by, a fulness of the blood vessels; but which may be combined, as in a case now under our care, with a debilitated state of the system. This irritation may be seated in any part of the system; though, in the large majority of cases, it is located in the uterus,—proving, that this organ is not as passive during pregnancy, as is contended for by our author, and accounts sufficiently well for the buffy state of the blood during utero-gestation. This, we are aware, may be called by Dr. Dewees mere theory; but it is a theory that will lead to the same practice as is recommended by him; and has this advantage over some "conjectures," with which many works abound, of being more consonant with the received principles of physiology and pathology, and backed by the best authorities in medicine.

In an interesting chapter of twenty-six pages, on leucorrhœa, our author enters fully into the nature and treatment of this complaint; and we cannot help regretting, that our limits will compel us to restrict ourselves to a very few remarks and extracts. We believe, that Dr. Dewees has devoted too much space to an examination of the various divisions and subdivisions, that have been made of this complaint by systematic writers;—divisions, which cannot be regarded as of much value in a practical point of view, and have varied according to the particular pathological and physiological notions of each writer on the subject.

Passing over the whole of this subject, as well as over an unnecessarily long refutation of some opinions of Cullen's, respecting the vessels which furnish the mucosities of leucorrhœa,—opinions, which, we may venture to remark, no one now cares much about—we proceed to a subject more worthy of our attention; we mean, the treatment of leucorrhœa.

Regarding the disease, in his two first varieties, by direct and indirect irritation, to consist in an inflammation of the mucous membrane of the vagina, and sometimes of the uterus, &c. yielding a copious secretion of mucus, Dr. Dewees proposes a plan of treatment, which is at first strictly antiphlogistic, and consists in the second stage, after the febrile and most acute symptoms have been removed, in the administration of the tincture of cantharides, until strangury is produced, (unless the disease is arrested before this symptom appear,) and in the use of astringent injections. He divides the idiopathic form of the disease, or that by direct irritation, into three stages, characterized by more or less severity, and manifested by some difference in the colour and consistence of the fluid secreted, and requiring some modification in the treatment. But as these modifications consist only in the degree of perseverance with which the plan above mentioned is to be continued, and in the extent to which it is to be pushed, according to the violence of the disease, we shall not enlarge upon the subject here, but refer those who are desirous of the details of Dr. D.'s precepts, to the book itself, in which they will find a great deal of useful matter. Dr. D. does not enlarge so much on the treatment of his second species—that from remote or indirect irritation, as could have been wished. It is true, that in speaking of the seat of the disease, he states, that he does not allude to that variety of it which is symptomatic of some derangement of the proper substance of the uterus, or attendant on a prolapsus of this organ; intending to treat of them under their respective heads, and probably to allude, likewise, to the mode of treatment in such cases: but as he also includes under the same head, those instances of the disease that arise as a symptomatic effect of an irritated rectum, when subject to hæmorrhoids, or the seat of ascarides; of the irritation of the gums, as in early dentition; of the stomach, when dyspeptic; some of which affections are not treated of in the present volume, and yet may seem to modify the treatment of the leucorrhœa, and even contraindicate the use of the cantharides; we think the method of treatment in this species of the disease ought not to have been so entirely overlooked. Nor do we find any particular details relative to the treatment of the third species, or that by *habit;* except these few words, contained in a note to page 239. "It may be well to observe, that a strict antiphlogistic plan is constantly pursued, during the cure of either stage of this complaint, until we are assured the discharge is maintained by habit." What is to be done when this occurs, we are not distinctly told, unless the doctor regards this *variety* to consist in the chronic stage of either of his two varieties; and thinks he has fully answered his purpose, by marking the manner of treating this period of the complaint by his favourite remedy, the cantharides, (to the efficacy of which we can bear testimony,) and by astringent injections, which, he remarks, should never be used, until the discharge becomes more copious, but thinner.

We proceed now to say a few words on the treatment Dr. DEWEES proposes for carcinoma uteri.

> "The first object," he remarks, "in the treatment of carcinoma uteri, is to prevent the ulceration from taking place; this is to be done by the reduction of the local inflammation, (which is an essential to the disease,) by such means as are best calculated to diminish the quantity of circulating blood, and to abate arterial action." "These ends will be found best answered by, 1st, blood-letting, both general and local; 2d, by purging; 3d, by an abstemious diet; 4th, by cleanliness; 5th, by rest."

Dr. D. recommends the first to be employed, and blood drawn from the arm, when there is considerable arterial action, which, he remarks, is often the case. When this excitement is not so great, and especially if there be a severe throbbing pain above the sacrum, he prefers the local abstraction of blood by cups or leeches. Nor does he restrict the use of bleeding, in such cases, to individuals of a plethoric habit; having constantly found, that even in patients not enjoying this state of fulness of the blood vessels, when the pain was severe, the pulse tense and frequent, the skin hot, and sleep uncertain, the abstraction of a few ounces of blood could afford, not only considerable relief, but would place the systèm in a better condition for the use of narcotics. Dr. D. prefers local blood-letting, when it can conveniently be had recourse to; and thinks, that leeches, when applied to the vulva, are more efficacious than when applied to the back. He has found it necessary to have the local blood-letting repeated, sometimes every three or four weeks. From the result of the experience of some late French physicians, and from some trials of our own, we are inclined to believe, that the treatment of carcinoma uteri by local blood-letting, repeated oftener, however, than Dr. D. seems to have done, aided by moderate purging, by an abstemious diet, by cleanliness, and rest, is the most successful, and if persevered in steadily, and resorted to before the disease has progressed too far, will save the patient much suffering, and serve to dispense her from swallowing many poisons, regarded by some as specifics, and of which we are glad to find Dr. Dewees has made no mention.

We are compelled to omit Dr. Dewees' remarks on purging, diet, &c. and to refer the reader for much valuable matter, under these heads, to the volume itself. Passing over, also, the section on polypus of the uterus, which contains nothing remarkable; that on cauliflower excrescence of the same organ, which is in great part taken from Dr. Clarke; and the long chapter on uterine hæmorrhage, which, we believe, is now sufficiently known to the American reader, being here republished for the fifth time; we proceed to offer a short sketch of Dr. Dewees' views, respecting the nature and treatment of hysteritis.

This disease, as is remarked by Dr. Dewees, has almost always been confounded with puerperal fever, owing to the undefined meaning attached to the latter term,—every disease attacking the puerperal woman being denominated a puerperal fever. Dr. Dewees, however, restricting this term, like many modern authors, to the peritoneal inflammation attacking women in childbed, treats separately of hysteritis, of which he makes two species; the one, simple, or pure; the other, combined with inflammation of the peritoneum.

The causes of this disease are, all "the violences to which this organ may be exposed, in the exercise of its functional powers, during the expulsion of the child; those to which extrinsic aid may expose it, when its own powers have been either insufficient or mistaken for this purpose; those which may arise from the artificial delivery of the placenta; or those which may act independently of either," as cold, some secret influence in the air, improper regimen, &c.

It generally attacks the woman within the first five or six days after delivery. This inflammation, Dr. Dewees thinks, can be distinguished from every other by the following signs:

> "The woman complains of a pain at the lower part of the abdomen, which gradually increases, or can be easily augmented by pressure made immediately above the symphisis pubis. It is also increased by any motion which may disturb the repose of the uterus; as turning in bed, sitting up, passing of water, and going to stool." "If the fingers be made to press upon the uterus externally, it will be pretty readily distinguished, by its size being greater than usual for the period after delivery; its hardness, which is very resisting; and by its unusual tenderness." "The pain which the woman feels is constant, or it may be occasionally lancinating; but always greatest when the uterus contracts, and produces after-pains." "There is no swelling of the abdomen, in the commencement of this disease, unless it arise from the augmented size of the uterus itself; which is never so great in the commencement of the complaint, as to make it conspicuous. The abdomen does not participate, in the slightest degree, with the uterus, in simple hysteritis; hence, there is none of the tenderness which is witnessed in peritoneal inflammation, or puerperal fever."

There is a frequent desire to make water, attended with more or less pain; at other times, there is a retention of urine; showing that the urinary apparatus participates in the irritation. As in other cases of inflammation of vital organs, there are what have been denominated constitutional symptoms; that is to say, the heart, arteries, stomach, brain, &c. become involved in the irritation, and manifest their sufferings by the usual symptoms of fever, &c. The pulse in this case, as in other inflammations of parenchymatous organs, is full, strong, and hard, and rarely exceeds an hundred strokes in the minute. The lochia are generally suppressed; but Dr. D. very properly rejects the opinion of the older, and adopts that of the more modern writers, who maintain, that this suppression is an effect, and not a cause, of the disease. The mammæ, he also remarks, sympathize less with the uterus, when inflamed, than with the peritoneum under the same circumstances.

In the mixed hysteritis, to the symptoms above enumerated, are added some of those which manifest the extension of the inflammation to the peritoneum, and which we shall notice in speaking of puerperal fever. This complication is generally fatal.

For the treatment of this disease, our author recommends the antiphlogistic plan, pushed to the fullest extent. Of bleeding, he remarks, that it cannot be regulated otherwise than by its effects, its quantity being of a minor consideration, should the symptoms which created the necessity, continue to demand its repetition. Dr. Dewees recommends, also, the use of local blood-letting, as soon as the pulse is sufficiently reduced by the lancet; and selects for the application of leeches, the parts nearest to the fundus uteri, and also the vulva. "To co-operate with bleeding, purging must be instituted simultaneously with it," and kept up by suitable remedies throughout the whole course of the disease. Dr. Dewees does not approve of fomentations to the abdomen, in which he differs from the best authorities in medicine. Nor does he think blistering the abdomen very useful in this complaint. Of sudorifics, he remarks, that in the early stage of the complaint, they are altogether inadequate to the production of perspiration; and when it is on the decline, they are generally unnecessary. "We have thought them occasionally useful, where the system had yielded to previous treatment, and nothing but a little feverishness came on in the evening, accompanied by watchfulness and a dry skin." Dr. D. gives the preference to Dover's powder. He thinks opium of little use in this disease, "unless it be to relieve some sudden symptom, as severe and unexpected pain in the bowels, from flatulency, or other causes, when the fever is pretty well under command; to moderate unnecessarily severe purging, or hypercatharsis; or to give temporary comfort to an exhausted or irrecoverable patient. Indeed, if depletion has been ample, there is very little use in the opium."

The subject of the succeeding chapter, is puerperal fever—a disease, which has afforded more matter for dispute, as to its nature, seat, and treatment, than any other in the long catalogue of maladies to which the female subject is liable. Dr. DEWEES has very unnecessarily extended this chapter to ninety-two pages, whilst he could have said as much as it was really necessary to say on the subject, in twenty. Nor do we find much reason to congratulate him for order and clearness in the arrangement of his subject, or the taste he has displayed in the execution of his task; for many of the pathological positions he assumes; or for the choice of the authors he follows, or combats. Thus, in the present state of pathological science, it is hardly admissible, after asserting that puerperal fever is nothing more nor less than peritonitis, to enumerate among the characteristics of the disease, its being always attended by peritoneal inflammation (p. 366.); for, so far from the latter being the characteristic of the fever called puerperal fever, it is the fever itself; or, in other words, the group of symptoms called puerperal fever, which are the characteristic signs of the inflammation. Again, the doctor asserts that the fever is only the result of the local irritation; which no one now will dispute; but he adds, that this irritation is *occasioned* by the inflammation; an opinion which we maintain is the very reverse of the truth. As regards his arrangement, we will merely mention, that in treating of the history of the disease, he digresses widely from his subject, and combats, somewhat at large, Dr. JACKSON's sentiments respecting the effects of stimuli in warding off the disease. In speaking of the *period of attack*, he opposes the opinion of Dr. CLARKE, respecting one of the *causes* of the disease; and notices, with some detail, Dr. GORDON's and Mr. HEY's method of shielding the patient from an attack. We are willing to admit, that all Dr. DEWEES' remarks on these several subjects, are extremely valuable; but they must be allowed to be out of place, and likely to involve the whole matter in confusion.

In the whole of this section, there is displayed an effort at pathological reasoning, which might have been saved by adopting the method pursued by many late French physicians, of detailing a few cases, with dissections, and making reference to some of the best modern authors on the subject of peritoneal inflammation. In this way, Dr. D. might easily have shown, that the train of symptoms known under the name of puerperal, or low child-bed fever, by authors of the last century, was the result of peritoneal inflammation; and that this inflammation differed in nothing from that attacking women at other periods, or even the other sex, and caused by cold, or mechanical injury.

By this means, also, the author would have found sufficient reasons for not asserting, that there is something peculiar in the nature of this inflammation, other than what must arise from the difference in the nature of the membrane affected, and from some peculiarity of temperament in the patient; and for not giving as his reason for so believing, that the nature of the effused fluid is different from other fluids yielded by inflamed surfaces, though these surfaces may be covered by serous membranes—a fact, which, he thinks, is proved by the analysis of this fluid by Dr. GEORGE PEARSON, to whom Dr. CLARKE submitted some for examination. 2. That this inflammation always terminates in effusion, or suppuration, before death, and never, or but very rarely, in gangrene. By adopting the plan we have mentioned, Dr. DEWEES would have found, that Dr. ROBERTS' remarks, respecting the identity of the fluid found after puerperal peritonitis, and after pleurisy—remarks which he himself quotes—are correct, and backed by the best modern authorities on the subject of serous inflammation; that the experiments of SCHWILGUE, who found the fluid effused in cases of puerperal fever, to present all the constituent parts of pus from serous membranes, are entitled to greater respect than those of Dr. PEARSON, who regarded it as a substance *sui generis*; consequently, that there is no foundation for believing the inflammation to present something peculiar. Each tissue of the body, when inflamed, throws out fluids, which differ more or less from those thrown out by the other tissues of the same individual; and this simply owing to a difference in their organization. Some become gangrenous much sooner than others, from the effects of inflammation. With these truths before us, then, we cannot think well of arguments advanced to prove that the inflammation of a part is of a peculiar nature; and resting on no better foundation than the fact, that the product and termination of this inflammamation are different from those noticed after the same morbid condition of other tissues.

Finally, by following this plan, the author would have saved himself the trouble of noticing and answering, lengthily, the opinions of authors, who might have been authoritative forty years ago, but who have certainly ceased to be so, since the researches of a Bichat, a Laennec, a Broussais, a Pemberton, on peritoneal inflammation, and of a Schwilgue, a Legouais, a Chaussier, not to mention many late English writers, on the same inflammation when attacking the puerperal woman.

Omitting here an enumeration of the symptoms of this disease, which are the same as those of peritonitis under any other circumstances,—adding, however, a few depending on the actual condition of the patient, we pass to the treatment. On this subject, much difference of opinion existed a few years ago; for, whilst some, influenced by the appearances they discovered on dissection, advocated the antiphlogistic plan; others, deceived by the symptoms of the last stage, gave to the disease the name of low fever of child-bed, and either condemning altogether antiphlogistics, or using them very sparingly in the early stage, had soon recourse to bark, wine, and other remedies, supposed to possess anti-putrid virtues. Of the comparative success of these two plans, it is unnecessary to speak here; as experience, in almost every country, has shown in the most conclusive manner, that the treatment by powerful antiphlogistic means, is the only one which promises any chance of success. Such being the case, and few physicians advocating now the idea of putridity in this disease, or recommending bark for its cure, we do not think it necessary to follow our author in his arguments, to prove that those who bleed copiously lose fewer patients, than the supporters of a stimulating practice; and we shall only extract from this section a few remarks, which we regard of the greatest practical value:

> "We are persuaded, there are few errors in practice greater than that which is founded on the belief, that when a *disease will not bear with profit depletion, that it then absolutely requires the opposite treatment;* and we are also persuaded, it has been the death of thousands." "The supposed tendency to typhus, in fevers of every description, when the patient has become weak, and especially if the tongue has become brown and dry, has

led, unhappily, to the use of tonic and stimulating remedies, in the practice of almost every body;* but were the results of such treatment faithfully recorded, we are convinced, there would be little evidence in its favour—indeed, so confident are we on this subject, that we never fail to consider the *cures* of such a state of fever by this method, but as *escapes*."

Bleeding being admitted, therefore, to be the principal remedy in the treatment of peritonitis puerperalis, it would next be a matter of much importance, to know how far it can be carried with any prospect of success. The pulse, which is in general so sure a guide in inflammations of other parts, ceases to be so in peritonitis, being sometimes small and depressed, whilst the other symptoms, as pain, &c. seem imperiously to call for the lancet. Dr. DEWEES remarks, that Dr. ARMSTRONG makes but two stages of this disease; but that, in his opinion, a third is essential to the well understanding of the complaint. This stage, he thinks, is intermediate, between the cessation of the inflammation, and the period of effusion; and is precisely the period at which blood-letting can do no good, and stimulants must destroy. It must be evident, that in a matter of so much moment, this distinction, if well founded, would be of the greatest practical utility, as the physician would know precisely how far to carry the lancet, and when to abstain from it. But our disappointment is very great, when we learn, a little further on, that

> "It would appear, that the first, or inflammatory, stage of puerperal fever, the stage in which bleeding has been so eminently successful, has no *discovered character*, by which it may be distinguished from the second, in which this operation is forbidden after the lapse of a few hours." "The rules which are to govern the loss of blood in this complaint, are, therefore, necessarily reduced to rather uncertain and narrow limits; and are more dependent upon contingencies, than fixed principles."

Uncertain, however, as are the signs by which we are to be guided in the use of the lancet, in the disease before us, we think our author is perfectly correct, in stating that we should bleed as early as we possibly can, and draw at that time as much blood as the system will bear. To this he adds, that the bleeding should be repeated *pro re nata;* but as a pro re nata cannot be regarded as any definite direction for a young practitioner, we will substitute the following, (which Dr. Dewees himself gives somewhere else,) that we should continue to extract blood—generally at first, and by means of leeches afterwards, so long as the pain remains severe, and symptoms of direct prostration do not make their appearance,—whatever be, at the commencement of the attack, the state of the pulse. In regard to the quantity of blood to be drawn at each bleeding, although some precise number of ounces has been designated by some English writers, we believe, with Dr. Dewees, that few physicians in this country are guided in their use of the lancet, in severe diseases, by such rules,—judging, as they do, of the quantity necessary, not by weight or measurement, but by *effects.*

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* This remark we think too exclusive, and would have been more applicable to the state of practice twenty years ago, than now. Undoubtedly, there are few physicians in this country, who stimulate simply for a brown and dry tongue, and muscular debility; and in France, we all know, that the practice is generally reprobated in the most unqualified terms.

"As regards our own practice in such cases," Dr. D. remarks, "we have always abstracted as much as the system would bear; that is, until the pulse was changed, pain abated, fever diminished, and there was a disposition to syncope. These alterations would take place sometimes from the loss of a smaller, and sometimes a larger quantity of blood; but until they did, we could not flatter ourselves we had *strangled* the disease; and this we always attempted, did it require only twenty ounces, or did it demand forty." "In constitutions wont to faint, from the loss of a small quantity of blood, we cannot always get at one bleeding the necessary quantity; the operation is therefore to be repeated, so soon as the system re-acts with decided force, unless all the expected relief is obtained by what has already been done. We do not wait for the lapse of any certain number of hours; for we are persuaded, in doing so, we permit the disease to gain ground: we should, therefore, draw it as quickly as the state of re-action will permit, if the symptoms continue." "Our rule hitherto has been, when the first bleeding, which we always make a very liberal one, if called to the disease early, does not abate the severity of the symptoms in three or four hours, to repeat it without hesitation; but not to the extent of the first, as evidences of its influence manifest themselves before an equal quantity is drawn. Nor do we limit it to this single repetition; for if the disease be not abated in severity, we know of no other general remedy that has the slightest control over it."

As we have already said, leeches should be employed in large numbers, and applied to the abdomen, anus, or vulva. Purging actively, from the commencement of the attack, and continued through the whole course of the disease, is recommended by the best English authorities on the subject of the disease, and is regarded as of indispensable necessity by our author, particularly in the first and most active stage. He recommends eight or ten grains of calomel to begin with, followed, in an hour or two, by repeated doses of magnesia and epsom salts. Dr. DEWEES seems disposed to think, that the croton oil might be resorted to, with great benefit, in this complaint. To emetics, notwithstanding the authority of Mr. DOULCET, Dr. ARMSTRONG, and others, he objects, as they appear to him "to be of doubtful efficacy as principal remedies, and limited in their usefulness as auxiliaries."

Of blisters, he says,

> "Our own opinion is, that they are less useful in this inflammation than in any other: we have used them formerly, but have abandoned them altogether of late years, because they are always extremely inconvenient, where the patient is to be so frequently disturbed by the operation of purgative medicine, and never, as far as we have seen, decidedly useful. If they are employed, it should be after the first or second liberal bleeding, and after the bowels have been well purged."

Dr. DEWEES ought to have added, that blisters should never be applied to the abdomen, because they very often tend to increase the inflammation,—a circumstance pointed out by BICHAT and BROUSSAIS, and which we have ourselves in several instances been witness to. When employed, after sufficient bleeding and leeching, on the inner parts of the thigh, they have sometimes appeared to hasten the cure, in ordinary cases of peritonitis; and may, therefore, be thought likely to produce the same effect in the present disease.

Dr. DEWEES disapproves of fomentations, and limits the internal use of turpentine to the second stage, which he denominates, very improperly, the gangrenous. This stage consists in nothing but the termination of the inflammation, and commencement of that of prostration; and will admit, according to our author, neither of depletion, nor stimulation. It would be, agreeably to us, the proper period for revulsion, and Dr. DEWEES thinks that the practitioner should continue the depletion from the bowels. We do not hesitate, however, to state, that few practitioners will be always able to make such nice distinctions of the stages of puerperal fever; but will experience, in attempting it, a difficulty, which we have already noticed the author himself seems to recognize,—

that Dr. ARMSTRONG's division of the disease into two stages, is as good as any, practically speaking, since all that need be said on the subject of stimuli, is, that they should not be resorted to too early, even after we find that depletion cannot be pushed any further. Besides, we believe, that few patients recover from this disease, when they have arrived at that period at which they may be thought to require stimulants; and that when they do, they would probably have got well as soon without them. Hence, we need not be in a great hurry about using such means; and this advice, to avoid precipitancy in the present uncertain state about the real signs indicating the second, or gangrenous stage, at which bleeding is no longer useful, and stimulants dangerous, is the only one that can well be given to the young practitioner.

Dr. DEWEES is no great admirer of opium, in the present disease; and says, that although he employed it where the patient suffered from uterine efforts, or after-pains, he is not sure it did not retard, instead of promoting, the cure.

Passing over the chapter on milk-abscess, we are next to notice Dr. DEWEES' opinions relative to the nature and treatment of Hysteria. We must confess, that in his very long chapter on this subject, occupying sixty pages, we again find much diffusion, and the same want of order in the arrangement of the matter, which characterizes the chapter on puerperal fever. We are sorry also to find, that he has not availed himself of the labours of many of the best modern writers on this disease, as GEORGET, VILLERMAY, &c.; and confined his researches to WHYTT and SYDENHAM, who, on the subject of the symptoms, may be consulted with some advantage, but can no longer be regarded as authoritative in respect to the pathology of the disease.

Dr. DEWEES thinks, with WILLIS, CHARLES LEPOIS, and, more recently, GEORGET, that hysteria is located in the brain, and not in the uterus; and to a certain extent, this theory (if to the brain we add the upper part of the spinal marrow) is correct; for, in the present state of our knowledge, we are not justified in admitting the possibility of violent or general *nervous* symptoms, without the existence of a primary or sympathetic irritation of the cephalic and spinal organs. But if it be meant, that this irritation of the brain is never the result of irritation in other parts of the body, and often in the uterine system, then we maintain, that this view of the pathology of the disease is incorrect, and contradicted by facts. Indeed, Dr. DEWEES himself admits, "that a certain condition of the nerves of the uterus, like any other portion of the body, may give rise to that combination of symptoms termed hysteria;" and in another part of the work, he says, "I have repeatedly seen hysteria, in its most aggravated forms, attend upon each return of the menses in very young women; but," he adds, "in all such cases, the particular state of the uterus, at this period, served but as an exciting cause to this affection; for hysteria could be excited in these individuals, at other times than at the menstruous periods, by any cause usually capable of producing it." Now, we believe, that these concessions are sufficient to prove, that hysteria is not *always* dependent on an idiopathic irritation of the brain; but arises occasionally from irritation of the uterus, transmitted secondarily to the brain, and reflected by this latter to other parts of the body. No one, at least of any authority in pathology, has ever maintained, that the irritation producing hysteria was located in the uterus, to the exclusion of any cephalic irritation; or that there was a "necessary connexion between any condition whatever of the uterus and hysteria, that is, as genuine cause and effect:" in other words, "that every derangement of function, or even lesion of this organ, (uterus,) will produce hysteria." To have maintained this, would have been to maintain an absurdity, contradicted by the result of daily observation; and all those who have advocated the opinion, that an uterine irritation will give rise to the disease, are yet to be proved so much destitute of common sense, as such an assertion would have indicated. All that has been, and still is, maintained, is, that although the irritation giving rise to the symptoms of hysteria is located in the brain, and may be produced by any cause acting directly upon that organ; still, it is often excited sympathetically by an irritation located in the uterine system, or occasionally in another part of the body.

As we have not sufficient space left, to enlarge upon the subject of hysteria, we refer the reader, for much valuable matter on the symptoms and causes of the disease, to the volume itself, and content ourselves with a few extracts on the treatment.

"There are few errors more common in practice, than that of treating *nervous symptoms* independently of the circulating system; and hence, the too often want of success, of usually proper remedies, when administered without this regard. The belief, that blood-letting, or any other mode of depleting, is injurious in nervous diseases, has very often prevented the influence of the best remedies; and, consequently, has caused a disease to be protracted and obstinate, which would have yielded almost instantly to the common agents, had their administration been preceded by the loss of a few ounces of blood, or even perhaps by a brisk cathartic." "However ill depletion may agree with nervous constitutions, under a want of excitement in the vascular system, it is, nevertheless, indispensable, when hysterical symptoms are accompanied by an exalted arterial action; and it should, therefore, always be premised. Whoever expects to be successful, in the treatment of nervous patients, without paying attention to the state of the pulse, will find himself constantly disappointed; and the application of such medicines as are known to exert an influence upon the nervous system, will be sure to be unsuccessful, if not mischievous."

The rest of the treatment consists in the exhibition of the various antispasmodic and narcotic medicines, either by the stomach, or in form of injection. For the manner of using them, and for the prophylaxis of the complaint, we again refer to the book itself, and hasten to bring this already long article to a close.

Although we have, in the course of this review, taken the liberty to differ from our author, on some pathological, and other points of less consequence, all its readers will unite with us in welcoming the present volume, as a work of real practical value, more especially to young practitioners. We cannot abstain from expressing our regret, however, that the unnecessary length of many of the chapters has so enlarged the volume, as to compel Dr. Dewees to leave unnoticed, some of the most important diseases to which women are subject,—diseases, upon the treatment of which, we know, he could have offered many valuable remarks. Thus, what could have been more interesting to the less experienced members of the profession, than Dr. D.'s views respecting the proper method of treating cancer of the mammæ, dropsy and tympanitis of the uterus, nymphomania, phlegmasia dolens, &c. By not omitting these diseases, he would have conferred a great favour on the profession, and rendered his work much more complete than it is at present. This omission, however, as well as much diffusion in the composition, many unnecessarily long pathological disquisitions, and inelegancies in the style, may so easily be obviated and amended in a future edition, that we hope, from the interest we take in Dr. D.'s reputation as an author, that the rapid sale of the present edition will soon enable him to make the necessary alterations in the second.

ARTICLE IX.—*A Treatise on Physiology applied to Pathology.* By F. J. V. BROUSSAIS, M. D., &c. &c. Translated from the French, by JOHN BELL, M. D., &c. and R. LA ROCHE, M. D., &c. Philadelphia: H. C. Carey and I. Lea. 1826. pp. 560. 8vo.

IT is not our intention at this time to descant on the importance of correct physiology, whether for the guidance of the student in his reading, or of the physician in his practice. There is, we believe, but one opinion now held as to the utility of a knowledge of this branch of medical science, whatever discrepancies of sentiment may prevail respecting the most efficient means of teaching it. For ourselves, we are disposed to lay more stress than is usually done on the physiology of observation, not as opposed to, but corrective and confirmatory of the physiology of experiment. In other words, we conceive that course the safest which, while it demands the exercise of our senses, and a rigorous attention, calls, at the same time, on our reasoning faculties, for arranging, combining, and forming deductions from the apparent phenomena. It is by such means that we may obtain a competent notion of the function of the different external organs, for example, and even arrive at some very satisfactory conclusions from the physiological signs exhibited by the internal viscera. Thus, by noting carefully the relations between the stimulus of light, and the eye on which it strikes, we may discover numerous modifications in the state of this latter, and deduce some laws of vision. So, likewise, though the viscus be not presented to our senses, we may, by watching the effects of the stimulation of ingesta on the stomach, become apprized of the characteristic phenomena of digestion. Unless physiology be studied in this way, the experiments of the vivisectors, and the labours of the anatomists, will, we fear, be little else than *rudis indigestaque moles*, without form or beauty, and more calculated to perplex than enlighten, to bewilder than instruct. The observation of the signs furnished by the various organs in their physiological condition, that is, during their healthy functional rhythm, when operated on by the various agents of hygeine, is the necessary and indispensable preliminary to a knowledge of the meaning, and consequently, value of the signs exhibited by these same organs in their morbid or pathological state, and when subjected to agents hurtful in their excess, or poisonous in their own nature.

We would say then, unhesitatingly, with the celebrated Barthez, that a system of physiology, which does not furnish us with the means of analysing and classifying pathological facts, and from which we cannot deduce, *à priori*, precepts of medical practice, absolutely similar to those drawn from experience, is merely a frivolous amusement, unworthy of any well informed physician. The great Bichat was well aware of the intimate alliance which naturally exists between physiology and pathology, and even laid the foundation on which, as a common basis, both are, we hope, destined immutably to rest. We, of course, allude to his General Anatomy, in which the difference of function and varieties in the symptoms of diseased organs, are clearly and methodically shown to depend on certain primary conditions and peculiarities of organization, which he expressed by the term tissues. These are to the human body what the elements are in chemical compounds. Encouraged by his first success, Bichat conceived the vast project of forming a complete system of medicine, divested of hypothesis, and based on anatomy, the study of the functions in a state of health and a state of disease, the difference of tissues, the knowledge of the sympathies which preserve them in relation with each other, the observation of the effects, local and general, produced by the various modifiers applied to the organs; and, finally, on the results of autopsic examinations. But his premature death, in putting a stop to his own brilliant career, seemed also to be the signal for a cessation from practical inquiries in physiology, which became once more an abstract description of the functions of the organized body, and a study entirely diverging from that of pathology. None of his successors up to the period when Broussais commenced teaching, indicated the mode of transition of the organic phenomena of the normal to those of the abnormal state.—Vide *Archives Gen. de Médécine*, tom. I.

In the work before us, Professor Broussais presents the medical world with a system of physiology applied to pathology; in which we are able to gather data whereon to found a rational and successful therapeutical treatment. It is the attempt which Bichat purposed making, and even though it should not come up to our most sanguine expectations, we are bound to receive it with indulgence, and if found worthy, hail it with joy, as the harbinger of a bright day for philosophical medicine. Some idea may be formed of our author's plan, by the following extract from the first chapter.

"It is not my intention, then, says he, to present here a history of the functions viewed abstractedly; but rather to give the history of the physical life of man. Our object is to know the appearances that the animal matter of which he is composed assumes—to discover the organs that are formed from it—the order in which these organs are presented to the action of external bodies—the internal changes that are brought about, when those bodies we denominated modifiers (*modificateurs*) are placed in connexion with the organs—the manner in which organs primarily modified, modify others; and, if these latter operate on a third series, to ascertain the nature of this action, and when it will cease." p. 12, 13.

In the second chapter, under the head of *the composition of the human body*, we find the materials divided into

"1. The fixed animal matter, constituting the texture of the organs; 2. into the moveable animal matter, or the fluids.

"Gelatine, albumen, and fibrine, are the principal forms of fixed animal matter. They exist in various proportions in the different organs or apparatuses. They assume in the greater portion of the body the form of lines or filaments, more or less distinct from each other, and to which the name of *fibres* is applied."

The terms *organ*, *apparatus*, and *organic system*, are next explained, and the composition of the several parts of which they are formed is given. The brain and nerves consist almost entirely of albumen, the muscles of fibrine, and the cellular and serous tissues, tendons, and vessels, mostly of gelatine, which is also the basis of the osseous structure.

"None of the parenchymatous viscera and secretory glands are composed exclusively of one of the forms of animal matter. All, in fact, being furnished with blood and lymphatic vessels, excretory ducts, nerves, and cellular tissues; many of them possessing, besides these tissues, a serous, muscular, and mucous membrane, it is evident that the three principal forms of this matter must necessarily be found in them."

These three forms predominate likewise in the fluids, or, in other words, in the free and circulating animal matter, known under the name of *blood*. With these are also found various saline substances, and a red colouring matter, especially associated with fibrine.

In the third chapter, the author treats of *the vital properties of the tissues; vital power; vital laws.* He thinks that

> "The tissues are endowed with only one apparent property, which manifests itself by the condensation of the animal matter, at the moment this latter is placed in relation with an external body. If this property be examined in each fibre in particular, it is easily discovered to consist in a simple shortening. Physiologists have called it *contractility.*"

This exists in different proportions in the various forms of animal matter. Fibrine possesses it in the most eminent degree, and contractility may be said to be inherent in this arrangement of matter. Next to the fibrine, gelatine possesses the greatest share of contractility, as is seen in the cellular and laminated tissues.

> "Of all the forms of animal matter, albumen is that endowed with the least degree of contractility; nevertheless, in a great number of instances, it is possible to show that it possesses some."

It will be seen that Broussais refers to contractility all those movements of condensation or retraction, which some other physiologists have considered as the effect of the mere elasticity of the parts, which, when the distending power is withdrawn, have a natural tendency to condense. We apprehend that physiology will gain by admitting the phenomena to depend on an unit property, contractility, which is modified by tissues; being most energetic in its display in the muscle, and very faint in the nerves. We may, also, join our author in opinion, that the words *animal contractility*, and *sensible organic contractility*, do not express different properties; but can only serve, in the actual state of the science, to represent two circumstances, under which a property that is invariably the same, is manifested.

Sensibility is not regarded by Broussais as a vital property, common to the living fibre with contractility.

> "For, says he, if the sensibility of the fibre be rendered evident only by its contraction, when we say that the fibre is sensible, we imply that it has contracted."

In a note to page 293, he censures the division of sensibility by Bichat, into animal or perceived, and organic and not perceived, and adds,

> "The words *organic sensibility* analysed, express the following fact: *the fibre of an organized being has contracted, by having been touched by a foreign body.* The words *animal sensibility* express this other fact: *the*

animal has experienced pleasure or pain. Now tell me, I beseech you, what there is in common in these two facts? The first is a phenomenon entirely material; the second is purely intellectual. For the first, we require but a piece of organized matter; for the second, we want an animal full of life, having a cerebral centre, and being in a waking state."

Sensibility, then, according to our author, is to be regarded

> "As one of the results of the exercise of our functions—a result immaterial and incomprehensible in its nature, accompanied in all instances, with an exaltation of contractility, but which is not inseparable from it."

The *vital power* is described as

> "That which presides over the formation, development, and preservation of the body;" and "that which accomplishes the assimilation of nutritive substances—extracts from them gelatine, albumen, and fibrine—regulates the form, consistence, volume, and duration of our organs, and re-establishes them in conditions requisite for the state of life and health, whenever, in consequence of the action of a morbid cause, they have deviated from these conditions."

This vital power, or force, exists anteriorly to the properties, or rather anteriorly to the fundamental property of the tissues, which, as we have seen above, is contractility. We are entirely ignorant of the essence of this power, for it is a first cause. The first immaterial invisible instrument of the vital power—the one of which we are made acquainted only by the exercise of our reasoning faculties—finally, that by means of which the vital power creates, is by BROUSSAIS called *vital chemistry*.

> "The *vital laws* consist in a certain number of general phenomena, common to all the tissues, and which are discovered with so much constancy and regularity in all animals, that we are led to regard them as laws inseparably connected with the state of life. They are in some sort general functions, or facts constituting a part of the great function which is life itself." p. 24.

Our space will not allow of our specifying these laws in detail. They are twenty-two in number. Contractility is modified, or made to deviate from its actual mode in a greater or less degree, by all external bodies applied to the animal economy; and each modifying agent produces a deviation peculiar to itself.

When the organic movements of contractility are accelerated in a portion of the living tissue, the fluids are attracted towards it; from this has arisen the axiom *ubi stimulus, ibi fluxus*.

Vital erections are the result of increased organic movements of contractility, and of the attraction of fluids to the part producing increase of density and volume. These vital erections, when they have attained a certain degree of intensity, are denominated *irritation*, *super-irritation*, or *super-excitement*.

In all vital erections there is an increase in the phenomena of vital chemistry; as for example, of temperature, of secretion, when the part is endowed with this property, and of nutrition.

Contractility and vital chemistry are again declared by our author to be the fundamental phenomena of the animal economy; and whenever they become more apparent in one part than in another, this local increase of their intensity receives the name of *vital erection*.

Whenever vital erections, irritations, excitations, and super-excitements, are developed in any part of the system, they cannot attain a certain degree of intensity without being transmitted to other parts. This transmission will be prompt according as the part abounds in blood vessels and nerves.

The transmission of vital erections, or of irritations, is effected through the medium of the nervous tissue, which is specially destined to that use.

The transmitted is of the same nature with the primary irritation.

Vital reaction depends on the existence of a law, in virtue of which the power presiding over life reacts against debilitating causes.

Caloric is the first and principal excitant of vitality; it is this agent that gives to the germ the faculty of appropriating to itself nutritive materials, and employing them for its development.

The causes of the diminution of the vital phenomena, are either positive or negative; among the latter of which, is cold.

Among the other causes of the diminution of the vital phenomena, we must place the subtraction of nutritive materials, as well as of the fluids, and of all the agents necessary for the exercise of the functions.

When the reaction of the vital power against debilitating causes cannot succeed in re-establishing vigour in the debilitated part, it is directed to other parts, and produces in these, notwithstanding the general diminution of the quantum of strength and of vitality, a super-excitement.

The positive agents that occasion the diminution of the phenomena of life, are much less known than the negative. They have been denominated by a particular sect of physicians, *contra-stimulants*, but they are less numerous than those physicians imagine.

The physical laws are modified in the living body by those of vitality—but they become active whenever the latter are enfeebled.

Attraction is always active in the living body, though restrained and opposed by contractility.

Electricity and galvanism manifest upon the animal body exciting effects, that are observed primarily in the nervous system, and secondarily in the tissues to which these nerves are distributed.

The excitement of contractility, produced by galvanism and electricity, does not fail, when intense and often repeated, to exhaust this property: under such circumstances, the body is languid—the power of attraction predominates over that of vitality, and in general nearly overpowers the vital chemistry.

The above is an index of the vital laws, without the commentaries and explanations which the author gives with each of them.

In *Chapter fourth* we have the division of the functions into those of relation, connecting us with external bodies, and those contributing to the maintenance and preservation of the individual, without the intervention of any external agency.

A summary view is then taken of relations. Here the author begins the development of his favourite position, that the impressions on the surfaces of relation, (the senses,) and the effect they produce on the brain or mind, are modified by the state of the internal viscera at the time. Thus,

> "An aliment is presented to the sense of sight, hearing, or smell; if the stomach be in want of it, the perception is agreeable, and the desire of appropriating the aliment is developed with energy. If, on the contrary, the stomach be full or diseased, the perception is disagreeable; the aliment inspires a sensation of disgust, and the centre of perception determines, or tends to determine, movements proper for removing it.
>
> "It is very certain, therefore, that the centre of perception judges of the impressions of external bodies only, from their relations with the viscera, which these impressions can interest."

Chapter fifth contains an examination of the external surfaces of relation, or *of the external senses.* In speaking of the skin, we are told that the phenomena of relation, attached to its tactile functions, are of three species: those of the first relate to the intellect—those of the second to instinct—and finally, those of the third are manifested in the distribution of the fluids, and in the disorder of the organs charged with the performance of the various secretions.

The intimate connexion between the function of the skin and the state of the digestive viscera, is shown in the circumstance of a person attacked with gastritis, feeling indeed the sensation from a titillating body, but he is neither inclined to laugh, nor to struggle to avoid it. Remove the gastric irritation by leeches to the epigastrium, and he immediately becomes ticklish as before.

The account of each sense is preceded by an anatomical description of the organ, and followed by an inquiry into the manner in which its phenomena degenerate into disease.

Chapter sixth is taken up with an *examination of the Encephalon and its spinal prolongation.* Our author adopts, with slight deviations, the anatomical exposition of these parts as furnished by Gall and Spurzheim.

The centre of perceptions and volitions is declared to be at the point of insertion of the eighth pair of nerves, for here the want of respiration, transmitted from the internal pulmonary lining, is felt, and from this point emanates the volition determining the action of the respiratory muscles.

Chapter seventh is on the *Sensations*, *Instinct*, and the *Operations of Intellect.* Broussais joins Gall in opinion, that there exist intra-cerebral nervous apparatuses, appropriated to a certain order of ideas; but he does not think that the brain acts independently of the other viscera. He goes on to say,

> "Animals possess invariably the *cerebral organs*, (to conform myself to the language of this author,*) which preside over the prehension of aliments—the acts relative to generation, such as the seeking after a female or male, copulation, construction of the nest, incubation, the action necessary for seeking nourishment for their young, depositing their eggs in a certain place, fecundating those of their females, protecting and defending their young, disputing for the enjoyment of a female, &c. Wherefore, then, do

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* Gall.

not these animals constantly perform these acts? Because the condition of the viscera, which solicits them from the brain, is not constantly the same. Whenever the stomach is full, or diseased, the acts requisite for seeking and seizing aliment, cease."

We should be doing the greatest injustice to the author, were we to attempt to give, by means of extracts, a correct idea of the profound thoughts and forcible analogies and illustrations, contained in this chapter. The phenomena of instinct, and the operations of intellect, are treated of in a masterly, though it must be acknowledged not always in the most luminous, manner. It is enough to say, however, that here, as throughout the entire work, the reader is required to think attentively, to analyse and only draw inferences after much labour. The construction of the sentences is awkward, the style has little to captivate, (this ought to be known in justice to the translators,) and the arrangement of topics is not always the most logical; but in despite of these blemishes, which are, perhaps, most evident in the portion of the work now under review, there is an originality, an energy of reasoning, and compass of thought, which cannot fail to finally win over, and permanently retain, the esteem and conviction of the attentive student.

Chapter ninth consists of corollaries *on the Intellectual Operations and on the Passions.*

The following chapter, numbered by mistake the same, contains an exposition *of the manner in which the exercise of the Intellect, the Affective Movements, and the Passions become causes of disease.* We are told, that each passion exercises a morbid influence over certain organs, though it would seem that the digestive apparatus is the greatest sufferer. As illustrative of our author's manner of viewing these subjects, and as conveying at the same time a good moral lesson, we shall repeat what he says of the effects of anger.

"The sensation which gives the first signal of the explosion of anger, consists of an acute pain, referred to the epigastric centre; indeed it is so certain that it exists in this region, that vomiting of blood—excessive secretion of bile—the sudden absorption of this latter, which produces jaundice a few moments after, and violent gastritis, are often its consequence. That these phenomena are produced by the direct influence of the brain, through the agency of the nerves, does not change the question before us; for it is not the less certain, that the epigastric irritation forms a part of the passion [illegible]nominated anger, and that the principal seat of this irritation is in the stomach and its appendages. Besides, experience teaches us, that when primitive, this irritation directs the centre of perception towards the ideas of anger. This passion, when physiologically considered, is primarily a simultaneous irritation of the brain and epigastric centre; hence, the vital action of the brain is often changed, in the most violent paroxysms of anger, into hæmorrhage or inflammation. From this arise attacks of palsy, apoplexy, and phrenzy, which often resist the best directed efforts of the art." p. 193.

"The association of the heart with the head and stomach, forces it to participate in the irritation which they experience in anger; but it will not be constricted, as in the painful passions without re-action; or if it is so, it will only be during a short space of time. It will soon become turgescent, blood will be attracted with force into its tissue, and it will even, perhaps, become predisposed to hypertrophy. If it be already debilitated and enlarged, in consequence of an aneurismatic state, some of its cavities may even be ruptured. The aorta will not be free from all danger; and the lungs, also, becoming suddenly engorged, may perhaps be ruptured, or become inflamed. I have seen hæmoptysis, and violent pneumonia, result solely from this cause. The muscles, agitated by a too precipitate innervation, may remain in a tetanic state, or preserve ever after a convulsive and distressing mobility.

"Such are the consequences of anger, considered as an acute passion, and whatever may have been the painful one, against which it has served as a re-action. If we examine it in its chronic state, we find that its effects are less terrible, though still very alarming. The habit of impatience keeps up gastritis, and annuls all the effects of remedies and of regimen; it prepares the way to, and determines, attacks of apoplexy; it occasions the return of epileptic, hysterical, and gouty paroxysms; it brings on, with redoubled violence, habitual convulsions and tremblings; and excites on the skin the most rapid inflammatory congestions. An elderly man was seized with a violent fit of anger, in consequence of a visit from some foreign soldiers, in 1815. He was suddenly affected with a large erysipelas on the right lumbar region, which became gangrenous, and occasioned an extensive slough. It must be also borne in mind, that all the violent passions have the property of bringing on suddenly herpetic diseases, more or less inflammatory, and the cure of which is sometimes very difficult to accomplish.

"Anger is one of those passions, that act with greatest energy on the various points of acute or chronic inflammation; hence, surgeons dread its influence on all sorts of wounds. If there exist a painful part, either internal or external, or if this part be merely more irritable than the rest of the system, anger will excite in it an increase of sensibility. In some individuals, it will occasion the return of sick head-ache; in others, it will re-excite the sensibility of joints that have suffered from rheumatism and gout, that is to say, that have been inflamed; in a word, this passion occasions, in the most uniform and general manner, the exaltation of contractility and sensibility, which demonstrates, in the most evident way, its expansibly perturbating property." p. 194, 5.

To our minds, the above conveys a more forcible moral lesson, than the most eloquent recommendation and philosophical enforcements of the charm of equability of temper, or proper resignation, under the various annoyances and vexations to which man is heir.

In *Chapter tenth*, we find an account of *the Muscular Apparatus of Relation, and its dependencies*, terminated by a section, in which an inquiry is instituted, as to *the manner in which the exercise of the muscles may occasion, or become, cause of disease.*

> "The muscles are all under the immediate dependence of the brain; but they must be divided into *cephalic*, which, in the natural state, only obey the stimulus of the brain, with the consent of the will; and into *cephalo-splanchnic*, which obey the viscera through the intermediate agency of the brain, in spite of the will; and also obey this latter, but only when the viscera are not in want of their assistance. The cephalo-splanchnic muscles never act in obedience to the will, unless the viscera, with which they are associated, be modified.
>
> "Muscular action becomes cause of disease, by its influence on the circulation; by the rupture, and acute or chronic inflammation of the fibrine of the muscles, and of the other tissues of the locomotive apparatus; by irritation transmitted to the stomach; by exhaustion of the nervous power; and by producing a general languor, which favours the action of causes calculated to derange the equilibrium, and especially of cold." p. 223, 4.

These extracts, as apposite to the subject of chapter tenth, are given in anticipation from the next chapter, which embraces a *summary of the functions of relation.*

In the SECOND PART of the translation, answering to the second volume of the original, the author treats of the *Organic Functions.* These are arranged as follow:

"1. The Nerves of the Organic Functions.

"2. The Function of Respiration.

"3. The Function of Digestion, or primary assimilation with evacuation of its superfluity.

"4. The Absorption of nutritive materials.

"5. Circulation.

"6. Depuration.

"7. Secretion.

"8. Internal Exhalations.

"9. General Absorption.

"10. Nutrition.

"Such is the physiological history of the individual; then will follow that of its reproduction, in which we shall see the result of a particular act of nutrition, or a prolific nutrition, produce the re-appearance of almost all the phenomena already observed in the physiological life of the parents———"

This second part of the volume, while it is larger than the first, is, we think, at the same time, richer in pathological information, less abstruse, and more decidedly valuable, both to the student and practising physician.

Let us first take a cursory view of those opinions of our author, which are of a more strictly physiological character.

The nerves devoted to the organic functions, consist of what anatomists call the *great sympathetic*, or ganglionic system of nerves. These are, by BROUSSAIS, divided into three series:

"The first is connected with the nerves of the encephalic domain, whether cerebral or spinal, and passes with them to the muscles and the viscera; the second plunges directly into the viscera; the third embraces the arteries, and forms a plexus round their tunics, to the extent of sometimes inclosing them, as in a kind of sheath."

After enumerating the various ganglions and plexuses of this system of nerves, an inquiry, replete with ingenuity and pathological instruction, is then entered into, respecting the functions which they perform. It terminates in the following conclusions:

"1. The cords of the *cephalo-splanchnic* muscles withdraw these latter from the will, to make them obedient to the viscera; 2. the visceral cords regulate the movements of the heart, and the muscular parietes of the hollow viscera; 3. the vascular cords give power to the arteries, and invite more or less blood into their ramifications, according as the functions require it. By their presence in all the visceral arteries, they explain the redness of the tongue, eyes, &c. consecutive on gastritis; the injection and heat of the skin of the trunk which covers the inflamed viscera; the augmentation of the secretion of bile, and of saliva, in gastritis and inflammation of the gums, &c.; and by them we have accounted for sleep. In fine, the union or entire series of these nerves, as a result from what has been advanced, 1. establishes the independence of the internal movements, as regards the will; 2. forces the brain to lend its action to the viscera; 3. to receive from these latter, the excess of irritation which torments them; and, 4. to suspend the exhaustion of vital power, so soon as it is converted to the detriment of the individual." p. 249.

An account of the phenomena, healthy and morbid, of respiration, and the apparatus by which it is performed, makes up the next chapter.

The following one, *on the functions of the cerebrum and cerebellum, as tending to throw light on the action of the respiratory muscles*, is chiefly an analytical and critical review of the experiments of ROLAND, FLOURENS, FOVILLE, and PINEL GRANDCHAMP, on the different portions of the encephalic mass. The inferences from the pathological observations which the two latter of these gentlemen have collected, and the experiments they have performed, are,

> "1. That the brain is the seat of intellect, and of motion; 2. that the *corpus striatum*, and medullary fibres corresponding to this nervous mass, preside over the movements of the leg; 3. that the optic bed, and the medullary fibres to which it corresponds, that is to say, those of the posterior lobe, keep under their dependence the movements of the arm; 4. that complete hemiphlegia follows an injury simultaneously and equally affecting the parts presiding over the movements of the arm and of the leg; and that partial hemiplegia, or that which affects unequally the arm and the leg, depends on the alteration not being carried to the same extent in the optic bed and corpus striatum; 5. that the cerebellum is the source of sensibility, and not, as Mr. FLOURENS supposes, the regulator of irritation." p. 276.

The author himself holds the following language:

> "The intra-cephalic vasculo-nervous matter, or the gray substance of the encephalo-spinal apparatus, the extra-cephalic vasculo-nervous matter of the sensitive expansions, the intermedial white fibres, to transmit the stimulations from all parts of the body towards the brain, and *vice versa*, such are the conditions, which to me seem indispensable, for the exercise of the functions of the nervous system; and hence the reason why I have asserted, that the brain can never act alone in the most simple intellectual process, and even in the slightest sensation." p. 280.

In *Chapter fifth* of the *second part*, we have a full, and, in our opinion, luminous exposition of the process of digestion, and the phenomena characterizing its different stages, from the first ingestion of food on to nutritive absorption. BROUSSAIS is still inclined to admit the existence of a gastric juice—a belief almost discredited of late years, by the writings of CHAUSSIER, and the experiments of MONTEGRE, and others.

> "The question," says our author, "is as yet undecided; though, if we are to judge by analogy, we shall observe, that many animals are provided

with gastric glands, supplying a digestive liquid. We meet with such in the sucenturius of birds; the lamantin of the north (*Manatus*. Cuv.) presents, in the coats of its stomach, a gland of very considerable size, devoted to this purpose." p. 287.

We are desired to notice the community of vessels and nerves, between the stomach and transverse portion of the colon, in order to appreciate justly the associated action between these two parts.

Contrary to common belief, we learn from our author, on the faith of experimental observations, made by SARLANDIERE, on persons with artificial anus, that food, the least nutritive, such as the roots, stems, and leaves of vegetables, and fruits, pass more promptly through the pylorus, than farinaceous articles, as milk and meat; from which, it would seem, "that the internal gastric sense repels the aliments which offer the least assimilative matter, and retains, with a kind of complaisance, those from which it can derive better aid for nutrition." Similar observations have been made by LALLEMAND.

The cardiac region is regarded, in the work before us, as the principal seat of gastric digestion; and, moreover, we are taught, that "the pleasure of alimentation specially depends on the agreeable stimulation of the cardia, and satiety on the distention of the stomach."

In *Chapter sixth*, when treating of the *absorption of nutritive substances*, the writer does not coincide in opinion with BICHAT, as to there being a peculiar organic sensibility, called, by the latter, *elective*, residing in the lacteal absorbing vessels, and opposed to the introduction of whatever is not* adapted to the want of the animal economy.

"The absorbing surfaces are, on the contrary, very greedy, especially when the want of restoration in the system is decidedly felt; they admit the useless, the superfluous, and even hurtful, leaving it to the efforts of the animal economy to expel them by the depurating organs." p. 334.

Chapter seventh, on *the circulation of the blood*, contains a tolerably full account of the structure, functions, and diseases of the heart, arteries, capillaries, and veins. In section seventh, under the head *of the capillary circulation*, our author not only admits the opinions of BICHAT, and other modern physiologists, of the important part played by the capillaries, but goes still farther, and expresses his belief, that when these vessels "have reached a certain degree of thinness, they disappear, and the blood they contained is actually extravasated. It circulates in the interstices of the fixed animal matter, (which is every where porous,) no longer in large masses, nor even in small columns, but molecule by molecule, in immediate contact with those of this matter; and it is there that the phenomena of nutrition, of composition, and those of decomposition, must take place; and there also is verified, as respects living bodies, the axiom of the chemists: *Corpora non agunt, nisi sint soluta aut fluida.*"

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* In the translation, the negative is omitted, by which the sentence conveys a very different meaning from that intended.

We cannot, in this place, follow out the reasonings and illustrations, by which this position is endeavoured to be proved; but shall merely add another opinion of our author:

> "That in this animal matter, forming the basis of all the tissues, and which always contains more or less of nervous matter, all pathological phenomena are developed;" and "that the vessels and nerves, properly so called, are affected only secondarily, the one for the conveyance of fluids, the others for the transmission of the stimulation to the correspondent parts." p. 354.

In speaking of the veins, section eleventh, a belief is inculcated, that they are endowed with contractile movements, acting from the circumference of the body towards the centre, and that this action is one of the principal forces which cause the return of blood to the heart. The liver is viewed by our author in a double capacity, as a secreting organ, and a diverticulum, or reservoir, in cases of hurried or laborious circulation, for the blood; which, but for such a provision, would dilate and rupture the large vein adjoining the heart, and unduly oppress that organ itself. "The spleen is," he thinks, "a small or secondary reservoir, or auxiliary, of the great one, which is situated in the liver." The lungs, according to him, fulfil this office for the left side of the heart, the liver being only adjuvant to the right side.

In the chapter on *the Depurations*, we learn, that the multifarious elimination of worn-out matter and salts, detached from the solids and unassimilable molecules, constituting depuration, is accomplished, to a limited extent, by the digestive canal, and more ully and completely by the skin, kidneys, and mucous surface of the respiratory apparatus. This premised, our author thinks himself led to establish,

> "1. That the three eliminating and depurating organs, which have just been mentioned, are constantly exhausting a certain portion of vital power, and that this exhaustion becomes a habit to the animal economy; 2. that these three organs are always in simultaneous action, but unequally so, and in such a manner, that whenever one of them acts more, the others act less, and *vice versa;* 3. that all three alike evacuate serosity, but that each adds to it principles peculiar to itself, and which it alone is required to eliminate."

It is also rendered more than probable, if not absolutely demonstrated,

> "That the exhalent action, suppressed in the skin exposed to cold, is transmitted, through the medium of the digestive passages, to the tissues secreting and eliminating urine; and that there exists no direct relation between the kidneys and the cutaneous surface." p. 400.

This is an exceedingly important view of these phenomena, as tending to enable us to give their true value to the signs drawn from the nature of the sweat and urine, and to establish a correct diagnosis of many diseases.

Moderate irritation of the mucous surface of the stomach, acts on the kidneys, and produces an increased formation of urine; but when this irritation becomes excessive, the superfluous serosity can no longer be eliminated by the renal organs, but must find an outlet by the skin, either in the form of sweat, or, if the surface be hot and burning, as in gastro-enteritis of great intensity, it is exhaled in the form of vapour. Other phlegmasiæ, as of the liver, brain, and peritoneum, also lessen the quantity of aqueous fluid evacuated with the urine.

The first four sections of the chapter on *the Secretions*, treat of the sebaceous glands of the skin, of the mucous and the lachrymal glands, and of the secretors for digestion, viz. the parotid, submaxillary and sub-lingual glands, and the liver, and the pancreas. In Section fifth, entitled *Of the Functions of the Organs of Secretion*, our author denies the existence of proper *collateral* or *secerning* vessels, by which the secreted matter is formed. He thinks,

> "That it is in the extravasation and filtration of blood, particle by particle, through the glandular parenchymæ, that these separations and transformations of circulating matter take place, by which a portion of it is made to appear with attributes that it did not before possess." p. 425.

The grounds of his opinion are these:

> "The free particles, when extravasated, are in more complete contact with the primitive fibre, and can receive the transforming vital influence more readily than when they are collected in compact masses in the vessels. I have another reason to offer on this subject: it is, that a certain repose is necessary to the play of chemical affinities: now, that repose, or at least that retardation of progress, is more considerable in the extravasated fluids than in those circulating in the vessels. The vessels, according to my view, are destined to conduct the fluids, and not to change their form. I think, on the contrary, that they must, to a certain degree, preserve their peculiar qualities; for absorption, which could alter them, is scarcely performed in the excreting vessels. Whenever nature wishes to concentrate a fluid, she deposits it in a reservoir, and there removes from it whatever is superfluous, whilst the residue combines and acquires by repose the qualities necessary to the performance of the function for which it is destined."

The five sections following the above, embrace an inquiry into the *action* and *uses* of the glands before mentioned; and the chapter is terminated, according to the invariable practice of our author in this work, by a consideration of the manner in which the functions precedingly treated of, become *causes of disease.*

In Chapter tenth we read an account of '*The Internal Exhalations*,' viz. the *serous*, *adipose* and *medullary*, and of the tissues charged with these processes, as also their physiological action and pathological changes.

Chapter eleventh is on '*General Absorption*,' in which a view is taken of the lymphatic or absorbent system, its function, and morbid changes.

Chapter twelfth, on '*Nutrition*,' is replete with instructive disquisition and ingenious commentary, and serves to exhibit some of our author's peculiar views of physiological function, and of the nature of certain diseased states.

In the Chapter which follows, *on Generation*, the reader has the satisfaction of escaping the many unmeaning speculations and frivolous theories respecting this function, which abound in most works on physiology. The retrospective notices are brief, and the analysis of the opinions of the schools clear and complete. The concluding section, entitled "*In what manner the Action of the Genital Organs becomes the Cause of Diseases*," is full of instruction to the physician; and holds out to all a salutary lesson in morality, by exhibiting the unhappy consequences of excessive or unlicensed indulgence in sexual intercourse.

The last Chapter is on *the Development, Consistence, and Decay of Man, and of the various Temperaments.* The modifying influence of the temperaments over diseases, is laid down with brevity, and yet enforced by direct fact and novel illustrations, and the alterations in the temperaments, by the influence of the circumfusa, habits, and regimen, is displayed with equal felicity.

We had intended, in beginning this analytical notice, to present our readers with a sketch of the pathological deductions contained in the work before us; but we find that our limits will not allow of such an attempt at this time, and we must content ourselves with a few selections from the chapter on digestion, which will serve as useful hints to the physician in his inquiries into the causes of diseases, and for their prevention and cure.

The sixth section of this chapter, headed *Abnormal Assimilation*, especially merits a most attentive perusal, and is of itself calculated to dispel the erroneous impressions entertained of the practice of Broussais, by those who, either from want of time, or of inclination, or of ability, have hitherto been precluded from studying his works. Some of these persons, when they descant so feelingly on the horrors of starvation and the pains of inanition, and tell us of phlogosis of the stomach being produced by hunger and thirst —all with a view of disparaging the abstemious regimen so emphatically enforced by our author, are not aware that he himself points out most explicitly the morbid effects of hunger and thirst, of which, as a sound physiologist and careful observer, he could not possibly have remained in ignorance. Hence, the section just designated, opens with a notice of the pathological phenomena arising from the absence of the external agents, or ingesta—that is to say, the morbid effects of hunger and thirst—and an assertion immediately follows, that the deficiency of stimulus produces in some of our organs an excess of excitation.

"The first shade of a pathological state which results from a defect of aliments, is, therefore, weakness: but the stomach is a singular organ; its destiny is to be always irritated, and therapeutists ought never to lose sight of this important fact. If, then, it be not so by the presence of aliments and drinks, it becomes so in their absence; it is contracted and irritated; it invites blood, and draws towards it the fluids secreted by its annexed organs." p. 309.

Again,

> "It is very certain that hunger does not fail to produce thirst; that the stomach becomes over-excited, and finally inflamed, and ends by exhibiting all the sympathies of the best defined gastritis. It is then that the pains become atrocious in the stomach and parts corresponding; and if we would remedy them, we must proceed by giving small portions of water, gradually increased in quantity.
>
> "The thirst produced by the want alone of watery drinks, tends to the same result; the phlogosis is developed in the pharynx and stomach; solid aliments cannot be tolerated, and death takes place here as in other cases, always preceded by sadness, anger, and convulsive movements." p. 311.

But this admission of the effects of an unnatural deprivation of gastric stimuli, is not incompatible with a belief in the superstimulation of the stomach, when it is overcharged with ingesta, or irritated by non-nutritive substances.

> "Whenever the stomach is engaged in the process of assimilation, it is irritated, calls to it blood in abundance, contracts with energy, is heated, and, reacting on all the sensitive tissues, it becomes a very active centre of irritation to the animal economy. Restrained within just bounds, this excitation is favourable to the exercise of all the functions; too exalted, or too often repeated, it becomes a universal disturber, and a source of organic disorder, both in the viscus itself, and in those which sympathize with it. Alible substances, of the most healthy kind, may then generate the same evils as would follow from a deficiency of food."

Our author next points out the sympathetic participation in the excess of gastric irritation by the liver and brain, and goes on to describe the phenomena of morbid digestion—those occurring as well from excessive as from deficient stimulation of the stomach. He details the series of movements, and the consentaneous function of the parts engaged in the performance of 'the perturbating act of vomiting;' and here, in opposition to MAGENDIE and others, he insists on the active contraction of the stomach, and of its being the primary agent in bringing about the evacuation of its contents. The practical inference from the details of this process is, the danger of making too frequent use of emetic medicines, in cases in which the abuse of irritating ingesta, or the influence of another organ, has deranged the regularity of digestion. The author is here in direct array against RASORI and the Italian school of *counter-stimulus*, and contends that, if large doses of tartar emetic be taken without vomiting ensuing, it is in consequence of this medicine causing permanent spasm of the stomach, arising from "an excess of irritation of the mucous tissue; hence the gastric sense continues to be depraved and profoundly perverted in those who have been treated by this method."

On the next line with emetics and purgatives, BROUSSAIS places

> "All mineral preparations, all bitters, acrid substances and corrosives, in small doses; in a word, all medicinal agents which obstinately resist assimilation. If some among them seem to revive the digestive function, it is an illusory advantage; they all produce in the end a slow phlogosis, which depraves the normal or natural action of the gastric surface, and its disorganization is the necessary consequence." p. 323.

Our author next traces the physiological history of the youthful *bon vivant*, and shows, that, although for a time he may eat, drink, and be merry—laugh at the Pythagoreans, and ridicule the doctors, yet "this joyous mood is nevertheless occasionally interrupted by inflammatory complaints, which are always of the highest degree of intensity:—gastro-enterites, pneumonias, cephalites, anginas, ophthalmias, and acute rheumatisms, come on with violence under the influence of heat and cold, or of the passions—make rapid progress, and sometimes terminate in a few days in death." Some there are who recover promptly under any of these violent maladies, and exhibit, during convalescence, a voracity of appetite which, indulged, is followed by a return of health, strength, and fulness, so as to lead them to suppose that their medical advisers had done wrong in depleting and dieting them. But these, and another class still more vigorous, who resisted through youth and manhood the effects of the most substantial alimentation, are reminded, about the epoch of the decline of life, or fifty years of age, of their former indiscretions. They begin to have some pain in the right hypochondrium, which becomes after a while more troublesome—their complexion is now sallow—their tongue foul—mouth with a clammy and bitter taste—digestion retarded—they suffer from constipation and headache, flushes in their face, and a sensation of fatigue and weight referred to the limbs—the urine is in small quantity, red and burning. If at this time recourse is had to a physician, he "pronounces the words *gastric oppression*, *bilious turgescence*, *engorgement of the liver*, and he prescribes an emetic and a purge. Then one of two things takes place; either the copious evacuations, produced by the medicine, restore for a time the equilibrium, or the irritation is exasperated; and in this case it sometimes passes into the acute state, and these persons have, for the first time, a pretended *essential (idiopathic) fever;* or at times it remains in a chronic state, but with a degree of inveteracy greater than before a recourse to the evacuating method."

The explanation of what takes place in the viscera of persons thus affected, is given as follows:

"The slight pain which they experienced in the right hypochondrium, was an index to the irritation, and even latent inflammation, of the duodenum, or the superior portion of the jejunum. This irritation acting on the liver, forced it to an excessive secretion of bile, which, retained in the superior part of the digestive canal, by the irritation that opposed the descent of its contents, and neutralized the action of the large intestines, was brought up into the stomach, tasted in the mouth, and at times, being absorbed, produced jaundice. The pain of the stomach, and of the upper portion of the small intestine, affecting the head, produced in it cephalalgia; the brain being stimulated, rendered the muscles painful; and all these stimulations conjoined, have destroyed the feeling of habitual strength in the individual, and substituted restlessness and sadness. The gastro-intestinal phlogosis disturbed the renal secretion, and rendered the urine of a deep colour, turbid, and in small quantities.

"Now, if in this state, in place of bleeding the individual, putting him on regimen, and administering aqueous drinks, we allow him stimuli to his irritated surfaces, why should we be astonished that the latent phlogosis is suddenly converted into acute inflammation?"

After adverting to the effect of continued irritation of the liver producing a swelling and organic alteration of this viscus, joined to hypochondriasis,—our author sums up in the following strain:

"Add to these evils, the swelling of the mesenteric glands, a necessary consequence of chronic enteritis in lymphatic constitutions; gout, or articular inflammations, in persons subjected to the action of cold, and otherwise predisposed; the colic, which succeeds, after an indefinite time, to gastro-enteritis, and which produces diarrhœa; nephritis, and the formation of calculi, a common effect of vitiated renal secretion, itself kept up by this all-interminable gastro-enteritis; cutaneous inflammations, called *herpes;* ophthalmias; diseases of the throat; the propagation of the irritation of the cardia to the left lung, and of the pylorus and liver to the right, whence results phthisis; mental alienation, often brought on by hypochondrial delirium;—and we may then have some idea of the terrible effects of high living and good wine. If to these be added, the effects of tonics, bitters, anti-gouty, detergent, purgative, and deobstruent medicines, and, finally, the deleterious action of all those indigestible substances of which I have spoken, we shall begin to understand why longevity is of such rare occurrence among the rich, the powerful, the idle voluptuaries, and all those pretended epicureans, who so readily hailed the incendiary system of the famous BROWN." p. 327-9.

Evidences might be easily multiplied, but we doubt whether any stronger conviction could result in the minds of our readers, in favour of the analytical method of investigating morbid changes, and estimating the value of the symptoms of disease, as introduced and sustained by the study of, and acquaintance with, physiology, than from what is so powerfully set forth in the animated, and yet, we fear, too faithful picture, drawn by our author in the preceding passages. The length of these admonishes us of the necessity of drawing to a close, our notice of the work before us; and hence, we must forbear quoting some very interesting remarks and disquisitions on the venereal virus, in the chapter on the Secretions; on scrofula, and the *strumous diathesis*, under the head of General Absorption; and on inflammation, in the chapter on the Circulation. Enough, we apprehend, has been said, to show the spirit and scope of the work, an attentive perusal of which we may safely recommend; and, but for the fear of being misunderstood, we would go farther, and enjoin all classes of the medical profession, to study it carefully, as a matter of duty which they owe to themselves and the community, for the removal of misconceptions, the dispelling of errors, and obtaining a light to guide them in their future observations and inquiries.

MEDICAL LITERATURE.

RETROSPECTIVE REVIEW.

Article X.—*Traité des Fievres Malignes; des Fievres Pestilentielles et autres. Avec des consultations sur plusieurs sortes de Maladies.* 2 vol. 12mo. pp. 472. 455. Paris. 1742.

> Exegi monumentum ære perennius—
> Non omnis moriar, magnaque pars mei
> Vitabit libitinam—usque ego postera,
> Crescam laude recens,—sume superbiam
> Quæsitam meritis et mihi delphica
> Lauro cinge volens, Melpomene, comam.

The present volumes, although published without the name of the author on the title page, we learn, from the preface of an anonymous editor, but more particularly from a long letter by Dr. De Labbadie, to have been the work of one of the most celebrated physicians of the commencement of the preceding century. M. De Labbadie informs us, that the original MS. was placed in his hands by the author;—that it was subsequently much enlarged and improved by him, after frequent conversations which they had together on the subject of the diseases of which it treats; and, finally, that it was carefully corrected by the author himself.

From many of the facts detailed in this work,—from the places in which the diseases were seen, and whither, as the author informs us, he was sent by the government, we arrive at the certainty, that this celebrated author, alluded to by M. De Labbadie, is Chirac, who subsequently attained to the highest rank in the medical profession in France, and is, to this day, considered as one of the fathers of French medicine. But, independently of such collateral proofs, we arrive at the same conclusion, from the circumstance, that these volumes were received, at the time of their publication, as the posthumous work of Chirac, and by no one, so far as we have been able to learn, regarded as the production of any one else; or, at least, that they have always been considered as containing a faithful detail of the opinions of this author, on the seat, nature, and treatment of malignant fevers,—whether prepared by himself for the press, or written under his immediate inspection by M. De Labbadie.

This being admitted to be the fact in France, we see no reason to judge differently in this country; and as Chirac's pathological views of fevers, cannot fail to interest the readers of this Journal, particularly at the present time, when the nature of this important class of diseases is occupying the attention of the profession in Europe and America, we have thought that an analytical review of the volumes before us, would be read with satisfaction by all who feel an interest in subjects of the kind, but who have not the desire or opportunity of consulting the work itself.

For the information of those of our readers, to whom the reputation of the author may not be familiar, we shall offer here a brief sketch of his life.

Peter Chirac was born at Conques, in France, in 1650; and after studying with great care, at Rhodez, the philosophy of Descartes, proceeded to Montpellier, where, at the solicitation of Chicoyneau, chancellor of the then celebrated university of that city, he abandoned the ecclesiastic life, for which he was originally intended, and prosecuted the study of medicine. Endowed with a penetrating mind and solid judgment, Chirac perceived very early, that anatomy constituted the only solid basis of a rational doctrine; and devoting a considerable time to the acquisition of knowledge in that department of the science, soon became sufficiently proficient to undertake a public course of lectures upon it. In the year 1682, he graduated as doctor of medicine; and continued his lectures during five years. Not content, however, with acquiring a name as a teacher of anatomy, he applied himself, with the greatest assiduity, to the practice of medicine; and soon attained, at Montpellier, a reputation in the profession, equalled only by that enjoyed by Barbeyrac, one of the most celebrated practitioners of the place. Shortly after, he was chosen, at the suggestion of Tenque, one of the professors of the school, as his adjunct, and delivered a course of lectures on medicine to a very crowded audience. About this time, he published his essays, on the structure of the hair, on night-mare, and the iliac passion.

In 1693, **Chirac** was appointed by the Marshal de Noailles, at the suggestion of **Barbeyrac**, physician to the army of Roussillon, and in that capacity was present at the siege of Roses. The opportunity being favourable, and the army under the medical care of **Chirac** being sorely afflicted with the dysentery, he was ordered by the minister of war to make trial, in that disease, of ipecacuanha, which had but lately been introduced as a therapeutical agent, and which has since been so highly lauded by **Zimmerman**, and other writers of a more modern date; but in the hands of our author, the remedy, although used under every form, failed completely. The next year, 1694, **Chirac** was sent by the government to Rochefort, then desolated with fevers of the most malignant character, as well as with small-pox, measles, &c.; and found opportunities of making, during the course of the epidemics, more than five hundred autopsic examinations, the results of which powerfully contributed to change the views he had before entertained, relative to the nature of these diseases, and will be detailed in the course of this article. After continuing at Rochefort until the diseases, for the arrest of which he had been sent thither, had ceased, and recovering from a severe attack of malignant fever, **Chirac** returned to Montpellier, and resumed the practice of his profession.

In 1706, he accompanied the Duke of Orleans to the army of Italy; and the succeeding year, to that of Spain, where he remained until the end of the campaign. A short time after this, he repaired to Paris, and purchased, agreeably to the custom of the times, a situation in the household of the above mentioned prince, who, in 1715, appointed him, in the place of **Homberg**, his first physician, and obtained for him, at the death of **Fagon**, in 1718, the superintendence of the king's garden. In 1716, he was made a member of the Academy of Sciences;—in 1728, was granted letters of nobility by the king;—in 1730, was appointed his majesty's first physician, to fill the vacancy occasioned by the death of **Dodart**;—and, finally, died at Marly, of a pleurisy, on the 11th of March, 1732, at the advanced age of eighty-two years.

"**Chirac**," as is remarked by one of his biographers, "enjoyed the reputation of an excellent practitioner; he was universally sought after, although he spoke but little and drily to his patients, and announced to them without precaution, their approaching death. Violent towards his brethren, he exercised over them the most tyrannical empire. He was audacious enough, to shake off the yoke of the ancients. The immense influence he exercised over the practice of medicine in France, has not been sufficiently insisted upon. In order to have an idea of it, it is necessary to read the greater number of the writings of Bordeu, as we there find, that at the time this illustrious physician wrote, the theoretical and practical principles of Chirac continued to reign, although he died ten years before the period when Bordeu defended his thesis on sensibility."

The following is a list of the writings of Chirac:

1. *Lettres sur la structure des cheveux.* Montpellier, 1688. 12mo.

2. *An incubo ferrum rubiginosum.* Montpellier, 1692. This essay has been translated into French, and inserted in the collection of his consultations.

3. *An passioni iliacæ globuli plumbei hydrargyro præferendi?* Montpellier, 1694. 12mo.

4. *Lettre sur l'apologie de Vieussens.* Montpellier, 1698. 8vo.

5. *De motu cordis examen analyticum.* Montpellier, 1698. 8vo.

6. *Ergò suppuratione terminatâ, aquæ salibus detersivæ factæ preferendæ sunt sarcoticis oleosis.* Montpellier, 1707. 8vo. Translated into French, by Fizes. Paris, 1742. 12mo.

9. *Observations sur les incommodités auxquelles sont sujets les équipages des Vaisseaux et la manière de les traiter.* Paris, 1724. 8vo.

10. Finally, the work, whose title will be found at the head of this article, and which, as may be perceived, was published ten years after his death. His consultations, and several of his smaller essays, were translated into French, and in conjunction with those of his pupil, Silva, and the biographies of these two physicians, published at Paris, in two volumes, 12mo. 1744.

As we have already remarked, Chirac had the courage to shake off the yoke of the ancients, on theoretical and practical points, and made a better application of anatomy to the science of disease, than had been done by any of his predecessors. He foresaw the advantage that might be derived from a study of morbid anatomy,—endeavouring, on all occasions, to discover in the dead body, the nature of the disease that had brought the patient to the grave; and tracing, in all cases, the relation existing between the symptoms noticed during life, and the visceral lesions revealed by dissection. It is true, that many of his explanations were much obscured, amid the jargon of the humoral, chemical, and mechanical doctrines, which at that time prevailed in the schools; and on this account, although formed from good data—morbid appearances, were but little calculated to aid much in the advance of pathological knowledge. But as this is a circumstance arising from the very condition of the science, at the time CHIRAC wrote, and which he could not obviate, without possessing more original genius than he appears to have really been gifted with; and as his works, particularly the one before us, contain many valuable facts, serving to show early glimmerings of a light, which is shining forth at the present day with so much splendour, they should be regarded as possessing more merit, than the generality of those published in France during his time, and until the days of BORDEU and BARTHEZ, on subjects connected with medicine.

The first few pages of the present work are occupied with some very severe criticisms upon, and a refutation of, the ideas of the ancients, relative to the malignant, deleterious, and occult principles, to which they attributed the external and internal causes of malignant fevers, and against which their remedies were vaguely directed. CHIRAC endeavours to show, by a long train of reasoning, that the ancients, (not even excepting HIPPOCRATES, then, more than now, the oracle in medicine,) being entirely ignorant of the circulation of the blood, are not entitled to the respect paid to them by their successors. He does not spare those among the moderns, who followed, blindly and servilely, the precepts of the ancients; and lashes without pity, the physicians of Germany, and other northern regions of the European continent, for the propensity then prevailing among them, of dealing in pills, powders, specifics, &c.

Firmly impressed with the belief, that the cause of death, in those who fall victims to the different species of malignant fevers, is the same as that which produces their various symptoms, and not an occult and deleterious principle, he felt fully convinced, that in seeking and discovering the true cause of death in those diseases, it would lead him to the knowledge of the internal causes; in other words, of the particular modifications of the blood and organs, which constitute the essential character of the fevers in question. From these reflections, he was naturally led to the conclusion, that the only method for arriving at this knowledge, was to examine, after death, the condition of the blood in the large vessels, and the sensible alteration produced by it in the principal organs.

"I knew," he remarks, "that health and life consisted only in a free and easy movement of the circulation of blood in the arteries and veins, and in the facility which the blood possesses of freeing itself from several sorts of fluids in the several ducts which nature had established for various important purposes in the body; and I saw very plainly, that one could not arrive at a just knowledge of the causes of the interruption of the circulation in the different parts—of the separation of the various recrements in the different ducts, causing a cessation of all the functions of the organs, and of various recrements which are separated from the mass of the blood, but by examining with care the disposition of the principal organs and comparing it with their natural condition: and I also perceived that the examination of the state of the blood and of the other fluids was of the greatest importance for establishing in a sure way the curative indications to be fulfilled in the treatment of these diseases, as well as of every other. The necessity of making all these researches, and discovering the manifest and sensible causes of the fatal accidents which accompany malignant fevers, appeared to me so much the more indispensable, as I knew that the only object of medicine was to combat the sensible causes of diseases, and that all possible and imaginable insensible ones, not being within its domain, physicians should only be occupied with the sensible ones, and with discriminating, among those capable of alterating the circulation of the blood and the separation of the recrements, such as actually produce disease. This method appeared to me so much the surer in this research, that I was convinced that we could reduce diseases into two great classes,—viz. into the interruption to the circulation of blood in various parts, or into the interruption to the separation of the recrements in the various ducts of the body;—that all the different accidents which deranged the natural economy of the body, and of which so many different species of disease are formed, were, properly speaking, only necessary consequences of the two grand classes I have just established. I flattered myself, that, having a tolerable idea of all that is sensible in the structure of all the organs, as well as of the sensible modifications in the fluids which keep up their action, I would not fail to discover, any sensible derangement of the fluids which had caused an alteration in the organic disposition and natural play of the parts; or, at least, that, knowing the morbid disposition and the derangement of the organs, I could, aided by the knowledge of their natural and unnatural state, attain that of the vicious modifications of the mass of blood, and of all the recrements which had escaped my notice, and all my researches."

Were not the views detailed in the above quotation, obscured amid the false notions of a humoral doctrine, we are disposed to believe, that there are but few intelligent pathologists, even of the present day, who would not feel proud to have suggested them. Chirac's ideas relative to the importance of morbid anatomy, and to the necessity of tracing the relation of the symptoms noticed during life with the lesions discovered on dissection, are well worthy of particular regard, and should, we think, have been more carefully treasured by his successors, who, with a few honourable exceptions, continued down to the present century to regard dissections as of secondary utility in establishing a rational pathology leading to a correct practice. Be this, however, as it may, Chirac, as we have already remarked, had a fine opportunity at Rochefort, of testing the advantage of his method; for at his arrival in that city, measles and small pox prevailed to great extent, and were shortly after followed by intermittent, next by malignant, and finally by pestilential fevers.

Previously to entering into any arguments on the subject of the pathology of the diseases he was summoned to investigate, Chirac devotes a chapter to the anatomical observations on which his views were established, and to some preliminary propositions, by "means of which, he remarks, physicians will be able to arrive at a knowledge of disease." From this chapter we shall extract a few passages, in order to point out the peculiarities of his opinions.

1. "Every vicious disposition of the organs, or of the fluids, circulating in their vessels, preventing the free exercise of the natural functions, I call *disease*.

2. "Every vicious disposition of the organs or fluids which deranges the functions of the organs, and gives rise to all the accidents, I denominate essential and containing (internal) causes of disease.

3. "The difference of diseases, or of the essential causes which derange the functions of the body, can only arise from the essential and specific difference of the vicious disposition of the fluids or organs; from which it follows that the vicious disposition of the internal causes of diseases, being equal and specifically similar, must produce similar diseases."

These vicious conditions of the fluids and organs may present innumerable shades in respect to degree, without giving rise to diseases differing in nature, but only in violence. It is unnecessary, therefore, to multiply diseases, the cause of which is similar, but only varying in respect to intensity.

"Every agent that does not convey the idea of certain determined effects, cannot be regarded as the cause of such effects; in other words, every cause must give the idea of the power of producing certain determined effects, and a constant relation with these effects." "To combat the causes of disease, we should not only form an idea of them, but have a physical certainty of their existence."

Medicine, he continues, has no other object than that of combatting causes, the existence of which is certain; all those which exist only in the imagination cannot, therefore, be the object of the art. Of the former, he only enumerates the internal causes, the existence of which may be detected on dissection. In his opinion, the physician should, therefore, by endeavouring to discover the relation of the effects, or external and sensible alteration, try to attain the knowledge of their internal cause. The only method of attaining this knowledge, consists in ascertaining the condition of the various viscera in those who die of all sorts of diseases. The principal among these are the internal organs contained in the three cavities of the body. To maintain the natural condition of these organs, and to cure their diseases, constitute the main object of the physician. A knowledge of the anatomy of the healthy state, is essentially necessary for this purpose, and the physician must have a perfect idea of the manner in which the organs operate in the maintainance of health and life; as without such a knowledge it is impossible to discover any internal cause of death or disease.

No physician at all versed in the true principles of pathology, will refuse to admit, that in these sorts of axioms he discovers a great deal of good sense, and a pretty solid foundation, on which more modern opinions have been established. Our author's opinion relative to the necessity of searching in the bodies of those who die of all sorts of diseases, the cause of the external effects or symptoms they manifested during life, and his idea respecting the utility of a knowledge of physiology, are especially deserving of commendation; and we were glad to find in such valuable and old volumes a powerful corroboration of views we regard as fundamentally correct, but which are very frequently regarded by some as the mere vagaries of an enthusiastic and speculative mind.

Passing next to the description of the small pox, measles, &c.

he remarks, that in all those who died of the first of these diseases, he found the brain engorged with blood of a deep red and livid hue, as well as with a large quantity of serous fluid; the lungs less frequently affected;—the liver in an engorged state;—the stomach and intestines red, and their vessels very much injected; and the membranes of the brain, the lining coat of the stomach, intestines, and lungs, containing in some places small but incomplete pustules. The gall bladder was always filled with a thick, greenish or blackish bile; and the blood in the large vessels appeared quite dissolved. In those who died of measles, he invariably found the brain, lungs, liver, stomach and intestines, of a deep and livid red colour, and the three cavities of the body generally filled with serous fluid. In several places, the stomach and intestines presented purple and livid spots, and the gall bladder was filled with a dark and thickened bile.

In the intermittent and remittent fevers which succeeded to those diseases, he found the brain, liver, stomach and intestines engorged with blood of a very dark colour. In general the cavities of the heart and abdomen contained a quantity of serous fluid, and in several instances he found sanious abscesses in the brain and liver, and the blood in the large vessels dissolved, and resembling the washings of flesh. In the malignant and spotted fevers, he found the blood, of those who had died before the fourth day, coagulated in the vena porta and in the ventricles of the heart; the brain and liver were always found engorged, in their whole substance, with dark livid blood. All the ramifications of the vena porta were injected and filled with mealy (*grumelé*) blood—the stomach and intestines were "red, inflamed, and presented livid spots." When death took place, on the seventh day, and the fever had been violent, the blood was found dissolved in the vessels and in the ventricles of the heart; whereas in those who had died on the same day, with a small pulse and cool skin, it was found very thick and partly coagulated. In some who had died on this day, Chirac found serous effusion between the membranes of the brain, and in the cavity of the peritoneum. In the aggravated forms of the disease, which he denominated pestilential, the same appearances, but in a more marked degree, were discovered;—the stomach and intestines presenting very dark, livid and purple spots, and the liver being occasionally found to contain large abscesses, and to be sometimes itself, of the consistence of mush.

> "The internal cause of death in so large a number of fever patients, appeared to me manifest, from the connexion I traced between the state of the blood—its thickening, with the engorgement of the vessels of the principal organs; as well as from that existing between the alterations I discovered in the brain, liver, stomach, and intestines, with the violent accidents that had attended all these diseases. I perceived so clearly and distinctly the cause of them, that I was astonished, that so many ancient and modern physicians had erred on a subject so easy to elucidate, and which was not placed beyond the reach of the senses. I was surprised they should have had recourse to occult, venomous and deleterious causes, or to poisons or worms, to account for the great mortality occasioned by malignant fevers, whilst they could, by resorting to dissection, attain, without difficulty, a knowledge of a very simple and very sensible cause, which would have been easily presented to the mind."

It would be uninteresting and useless to follow our author in the detail of his pathological views, and into the inferences he draws from the alterations found by him on dissection of those who had died of the diseases we have noticed. It will be sufficient to state, that, adopting the notions of the humoral pathology, he thought that all malignant, pestilential, and other fevers, arose from a thickening of the blood, which occasioned an obstruction in the capillaries of the principal viscera, and gave rise to what he denominated an inflammatory disposition of these organs, and an inflammation of the brain. To these lesions he referred all the symptoms noticed in the cases he observed, and, as we have seen, hooted at the idea so prevalent, even at his time, relative to occult and malignant principles to which all diseases of a low and fatal character were imagined to owe their origin. His opinion respecting the nature of inflammation, approaches, as may be seen, very closely to that taught by BOERHAAVE, and is, in one part of the present volumes, claimed by CHIRAC, who asserts, that in his lectures he had long defended it. However this may be, it is certain, that the defenders of the localization of febrile diseases—those who pretend that all fevers depend on an inflammation of the mucous surface of the stomach and bowels or of the meninges of the brain, will find in CHIRAC a powerful support. His dissections, indeed, performed without any appearance of a determination on his part to *find* what his theories led him to wish to discover—an accusation often, and we think, unjustly, brought against some of the disciples of BROUSSAIS—speak more in favour of these views, than many long arguments adduced by some of their advocates. Five hundred post mortem examinations are not to be passed over in silence; and if in *all* the same organs are found inflamed, this circumstance cannot with any propriety be regarded as a mere coincidence, or the inflammation viewed as the effect of the fever. Were this sentiment advocated, and were the fever and inflammation maintained to be independent of each other, or the latter said to be an effect of the former, it might be asked, what are the symptoms in each case, peculiar to each disease, and how does it happen that fever will always affect the gastric organs or meninges, in preference to any other, and why will not the fever of pleurisy do the same? Until these questions are explained in a satisfactory manner, we must be allowed to regard the modern views of the pathology of fevers, backed as they are by the testimony of BAGLIVI, REGA, and of our author, as entitled to more regard than some members of our profession are willing to admit.

All the varieties of inflammations, he referred to different degrees of thickness in the blood; and considered the petechiæ and red spots, found on the skin of those affected with malignant fevers and plague, as arising from the same morbid process. The following extracts, conveying his opinion relative to the cause of death in, and to the nature of, these diseases, will, it is believed, be read with pleasure.

"Convinced, that a simple thickening and mealy state (grumelement) of the mass of blood, are capable of giving rise to so many different sorts of inflammatory and gangrenous tumours, not only in external, but in all the internal parts; and convinced also, from ocular inspection, that the brain and the rest of the viscera are inflamed in all kinds of malignant fevers, I easily comprehended, that a gangrenous inflammation, of large extent, of the brain,—that a great distention and engorgement of its vessels, necessarily and completely prevented the separation of the animal spirits,—that the compression of the medulla of the brain would prevent their distribution, and that the heart, as well as other parts, becoming paralyzed from the total interruption to the course of their spirits, will necessarily put a stop to the circulation, and cause death.

"I moreover comprehended, that a similar inflammation of the liver would put a stop to the separation and flow of bile, and that this ardent and fermenting humour would create, and keep up, an ebullition and fermentation in the mass of the blood, the final effect of which could only be a total dissolution of its elements, and a gangrenous condition, rendering it no longer capable of furnishing the recrements necessary to the maintainance of all the natural functions;—That in this state of gangrenous dissolution, the blood could neither furnish to the brain, spirits of a good quality, nor saliva, bile, or gastric juice, proper for dissolving the aliments, and for extracting from it a good chyle. I comprehended, also, that a simple or gangrenous inflammation of the liver, arresting the course of the blood returning from the stomach and intestines, would cause the engorgement of their vessels, and give rise in them to a gangrenous inflammation; and I could perceive so clearly, a very necessary relation of all these accidents with the interruption of the movements of the heart, and with the cessation of all the animal functions, that it appeared to me quite useless and superfluous to have recourse to some cause of an extraordinary nature, and differing from those which occasion the most common inflammations.

"Neither had I much difficulty to comprehend the relation existing between the cessation of the movement of the heart, and the extravasations of blood in the brain; between the suppuration which took place in this organ, or in the liver, and the cessation of their functions; between the effusion of serous fluids in the substance of the brain, and the complete relaxation of that organ, and all the disorders of the liver, and other viscera, such as I have detailed them. The causes of all these accidents appeared to me very plain, and presenting nothing marvellous; and as it was very easy for me to judge, that all these causes of death, which had completely interrupted the course of the circulation, were the same as had deranged its natural course, as well as all the functions which depend upon it, I concluded, without any hesitation, that all these causes of death, when carried to the extreme,—that those gangrenous inflammations of the brain, liver, stomach, and intestines,—that those extravasations of blood and serum in the brain and liver, were precisely the containing (or internal) causes of all those diseases which I designated, in imitation of all physicians, by the frightful name of *malignant fevers*."

As the internal or essential causes, he continues, which produce the disease, produce also all the symptoms, and as I found them to be similar, in all the kinds of fevers, from the simple to the pestilential, I concluded, that the internal or essential cause, in all these cases, was the same; and that, although these fevers had received different names, from the various accidents that accompany them, they were, nevertheless, the same disease, differing only as regards the degree of violence. For, if the violence and mortality of diseases, he remarks, were to cause them to change species, there is none among them that might not be divided into a great number.

As regards the causes of these fevers, on which our author enters very fully, it will only be necessary to remark, that he regarded them as consisting in the increase of temperature after a mild winter,—in the marshy exhalations developed under a very hot sun, and by a south wind,—in affections of the mind, and improper regimen, the common consequences of a state of war,—in the use of sour wine, of bread made with bad flour, and, finally, in inanition.

In his fifth chapter, "on the diagnostic signs of malignant fevers," our author analyzes most of the symptoms of these fevers, and refers them to the affection of the different organs. As we cannot, from want of space, follow him into a detail of his views on this subject, we shall content ourselves with a very few remarks. To the inflammation of the brain preventing the regular flow of the animal spirits, he refers the prostration of the whole system, and particularly of the muscles; the weakness of the heart's motion, as well as of the faculties of the mind, head-ache, &c. The nausea and vomiting, as well as the hæmatemesis, the lientery, and all bloody and dysenteric stools, he referred to the inflammation of the liver, stomach, and intestines. The hiccup, he referred, also, to the inflammatory disposition of the liver, and of the cardiac orifice of the stomach. All this, however, is obscured by hypothetical explanations, with which we can have nothing to do.

"All these signs being deduced, therefore, from the cause to its proper effect, or from the effect to its sole cause, whenever they are assembled together in the same subject, they will lead to the conclusion, that the brain, liver, stomach, and intestines, are in a state of inflammatory disposition, and that the disease is really a pestilential malignant fever; and although this disease is accompanied, during its progress and at its height, with other severe accidents, as buboes, carbuncle, parotid abscesses, purple, livid, and gangrenous spots, &c. as they are all separable from the essential character of the complaint, and do not always accompany it in its commencement, progress, or height, there will be no reason to make them enter as characteristic signs of plague. Nothing would be more ridiculous, than to see a physician, who wishes to decide on the plague, wait the supervention of buboes, carbuncle, purple or livid spots, which only come on the third, fourth, or seventh day, and sometimes do not appear at all. A man would be very unfortunate, who, being attacked with this disease, which demands such prompt and efficacious remedies, and places the patient in danger of a sudden death, if his physician required three or four days of observation, to learn the nature of the disease, before establishing his curative indications, and deciding on the remedies necessary for the cure. The reason why so many accidents have been heaped together, in the description which so many writers have given of the plague, is, that being perfectly ignorant of the essential character of this disease, they could not express its nature, except by making use of general and very vague terms, such as would have been malignant, epidemic, and contagious disease, which, not giving any distinct idea of the depravation of the blood, nor of the derangement of the organs, would have left the mind of the reader in too great obscurity; so that, in order to fix it a little more to something sensible, instead of giving the essential character of the plague, they were obliged, in order to give some idea of it, to add to the general and vague terms of which they expressed the nature, a detailed account of the most sensible accidents which commonly accompany this disease, although they almost never appeared in the commencement of the attack."

Passing next to the treatment of malignant and other fevers, pursued and recommended by Chirac, and which is detailed in the second volume of the present work, it will not be necessary to enlarge much on the subject, as many of the indications he lays down, as well as the mass of reasoning by which he endeavours to support them, are not likely to be regarded as of much practical value at the present time. He remarks, that the indications must all be founded on the state of the blood, and on the known and sensible alterations of the organs; for, as he very correctly adds, it is going very much astray from the true spirit of medicine to establish curative indications in diseases, on vices and causes altogether placed beyond the reach of our senses, and which have no reality in nature, but only in the imagination of some writers. Judicious as are these remarks respecting the necessity of applying remedies to something positive, and not to an ideal being, called malignant principle, fever and the like, Chirac, although admitting the inflammatory nature and localization of the diseases he describes, and making use of some means capable of removing this morbid state, was too much attached to his ideas relative to the agency of a thickened blood in the production of the morbid phenomena he noticed, to be consistent in his views, or in the selection of his remedies. Thus, firmly convinced of the necessity of removing this unnatural state of the circulating fluids, of lessening its heat and rarefaction, of correcting the tenacity of its fatty and oily principles, of diminishing the distention of the vessels, and removing the inflammatory disposition of the viscera, he, recommends bleeding, proportioned to the strength of the patient, stating that it should in general be more copious when the weakness of the function of the affected organs was greatest. He drew sometimes as much as twelve or fourteen ounces, several times in twenty-four or even twelve hours, and until the pulse became softer. He insists that when less copious, and less frequently repeated, bleeding, instead of being advantageous, was productive of serious injury; and he generally recommended the blood to be drawn from the saphena, in preference to the veins of the arm or neck. In order that the patient should not faint, he caused him to lay with his head very low, and with a little water or wine in his mouth, and allowed the blood to flow very slowly.

So far Chirac was consistent with the principle he lays down,—to be very attentive in preventing the gangrenous inflammation of the principal organs; but influenced by the belief that it was necessary to give a jarring to the liver and lungs—to remove the obstruction of the biliary vessels, to prevent any alteration in the blood that might result from any fermenting matters in the stomach and bowels, and by other motives equally hypothetical, he made use, after bleeding, and particularly in bilious habits, of large doses of tartar emetic, with the view of exciting vomiting. When the pulse was weak, and the patient had been badly fed, he had recourse immediately to the emetic, and abstained from the lancet. Together with these means he administered purgatives, but never when there existed plethora; mucilaginous and slightly aromatic drinks, or such as were made of a decoction of antiscorbutic plants. When, after having employed these remedies, the skin became pale and of a leaden hue—the eyes sunken in their orbits—the pulse weak, frequent and unequal, and the skin cold—when syncope supervened, and was frequently repeated—or when there were nausea, vomiting, colloquative diarrhœa, hæmorrhagic stools, and prostration of strength, although from its known *nature* the disease appeared to him still to indicate the continuance of the remedies we have enumerated, he had recourse to stimulants. When the diarrhœa was the only symptom to be relieved, he recommended emetics, purgatives, theriaca, diascordium, laudanum, chalk, and a variety of remedies of the same sort, according as he had to contend with one or other of the different species of the disease. For the constipation, the suppression of urine, hæmorrhages, nausea, vomiting, and delirium, he recommended bleeding, emetics, and purgatives, &c. When, from the commencement of the attack, the pulse was weak and the skin cold—in a word, when reaction had not been established in the system, he prescribed different sorts of stimulants, as sal ammoniæ, laudanum, saffron, and *lilium*. When the skin became warm, he prescribed some stimulating herbs of the class then called hepatic, joined with tartrate of potash, sulphate of soda and potash, and nitre, and next had recourse to bleeding. He prescribed narcotics internally when the viscera were irritated, and makes the observation, since frequently repeated, that in some cases in which these viscera are engorged and inflamed, pressure on the abdomen does not occasion pain. He often insisted on the danger of cordial diaphoretics, and states, that those physicians who administer them, do so with a view of driving out of the body a venomous and malignant principle, to which they refer the origin of the disease; but that in so doing they go astray from the true indications of the case. He in general proscribed aliments, even broths; but in some cases, when the patient was weak and disposed to syncope, he allowed a portion of broth immediately after the abstraction of blood.

About three hundred pages of the second volume of the present work, are occupied with consultations on various diseases. The doctrine professed in them is consistent with that advocated in the treatise we have analyzed; the thickened state of the circulating fluids, and the consequent inflammation of the various organs, playing a conspicuous part in most of the cases, however diversified, for which the author was consulted. As they present nothing worthy of our particular attention, however, we will not undertake to analyze them, but, without further remarks, take leave of Chirac, with the hope, that our readers will not consider the time we have devoted on this occasion,—picking a few good things from a mass of hypothetical reasoning under which they lay almost concealed,—as having been spent to no useful purpose.

BIBLIOGRAPHICAL NOTICES.

ARTICLE XI.—*An Essay on Morbid Sensibility of the Stomach and Bowels, as the proximate cause, or characteristic condition, of Indigestion, Nervous Debility, Mental Despondency, Hypochondriasis, &c. &c. To which are prefixed, Observations on the Diseases and Regimen of Invalids on their return from hot and unhealthy climates.* By JAMES JOHNSON, M. D. of the Royal College of Physicians, &c. Philadelphia, 1827. 12mo. pp. 154.

WE will venture to say, that this cheap, little volume, which sells for half a dollar, contains more sound precept, and wholesome practice, than will be found in one half the tumid octavos, which we buy for eight or nine times as much money, and throw by, unread, at last. It is full of clear details of what we believe to be the correct views of Dr. JOHNSON, concerning the nature and treatment of some of the most obstinate complaints, with which the physician is every day baffled, or the patient afflicted, tormented, and ultimately shuffled out of this mortal coil. We, therefore, most earnestly recommend it to our readers, as a treatise which they will be sure to peruse, if but for the pleasant style in which it is written; and sure to profit by, both as regards their own comfort, and the well-being of their patients.

Morbid sensibility of the stomach and bowels includes dyspepsia, indigestion, hypochondriasis, bilious disorder, spleen, vapours, melancholy, nervousness, irritability, mental despondency, the English malady, &c. &c. the whole of which depend on a morbidly sensible condition of the ganglionic nerves, which supply these organs. As from the stomach, a diffusive energy and pleasurable feeling may, as after wholesome food or drink, be extended to all parts of the body, and also to the mind, or, at least, to the organ of the mind, *without any distinct pleasurable sensation in the stomach itself;* so, from the stomach, when in a morbidly sensible state, may there be diffused over the whole system, intellectual and corporeal, a train of morbid feelings of the most distressing kind, with or *without* any distinct *sensation* of pain or uneasiness in the organs of digestion.

If there are many affections, dependent on morbid sensibility of the alimentary apparatus, attended with obvious disorder of its organs, there are also a great many, which are not manifested by any disturbance of them, but which are aggravated, or relieved and cured, as the patient, by turns, commits any errors in diet, on the one hand, or submits to rational treatment, addressed to the removal of morbid sensibility, on the other. We regret that the space allotted to these articles, will not permit us to follow the author, in his explanations of the above propositions,—we must refer to the book itself.

Dr. J. does not consider pain and tenderness in epigastrio, which are the usual accompaniments of these protean diseases, as evidence of inflammation. The practice of punching the fingers into a man's epigastrium, puts him in mind of what the school-boys call "hearting," and leads to inferences and treatment which are often erroneous. "There is, in fact," says he, "at all times, and in all people, even in the highest health, a greater or less degree of tenderness, on pressure at the pit of the stomach; most probably, owing to the vicinity of the great semilunar ganglion, or solar plexus, the sensorium of the abdominal viscera. What school-boy does not know how easily he may be what is called '*hearted*,' by a slight blow in that region? I repeat it, then, that tenderness in epigastrio is an exceedingly fallacious sign, and no criterion at all of organic disease in the parts underneath."

If a whole regiment were turned out on the parade, and served after the modern mode of exploration, Dr. J. thinks, they would "all wince, from the general downwards." He might have said, a brigade, or division.

The common and indiscriminate use of leeches, on the discovery of this symptom, he regards as often injurious; whereas, the affection would more naturally and readily yield to a blister, or tartar emetic plaster. "The fact is, neither tenderness, nor pain, in the stomach of a dyspeptic, affords any proof of inflammation of that organ."

The author makes an examination of the varieties of stomach affections, before named; and, after stating their causes, whether physical or moral, proceeds to the treatment, from which we shall now make a considerable extract, and take leave of the treatise.

At p. 108, he says, "There is a great error committed every day, in flying to medicine at once, when the functions of the stomach and liver are disordered, the secretions unnatural, and the food imperfectly digested. Instead of exhibiting purgatives, day after day, to carry off diseased secretions, we should lessen and simplify the food, in order to prevent the formation of these bad secretions. From four ounces of gruel, every six hours, he will, under many states of indigestion, derive more nutriment and strength, than from half a pound of animal food, and a pint of wine. Whenever he feels an additional uneasiness or discomfort, in mind or in body, after eating, he has erred in the quantity or quality of his food, however restricted the one, or select the other. If the food and drink irritate the nerves or the stomach, it must be reduced and simplified down even to the gruel diet, above alluded to. I have known a dyspeptic patient gain flesh and strength, on half a pint of gruel, thrice in the twenty-four hours; and gradually bring the stomach, step by step, up to the point of digesting plain animal food, and biscuit.——But it is quite preposterous to prescribe a certain quantity, or even quality, of food and drink, till the power of the digestive organs is ascertained.——I care not, if the dyspeptic invalid begins with a pound of beef-steaks, and a bottle of port wine, for his dinner. If he feel as comfortable at the end of two, four, six, eight, or twelve hours, after this repast, as he did between breakfast and dinner of the preceding day, he had better continue his regimen, and throw physic to the dogs. But if, a few hours after dinner, he feel a sense of distention in the stomach and bowels, or any of the symptoms of indigestion—his repast has been too much, or improper in kind; and he must reduce and simplify, till he come to that quantity and quality of food and drink for dinner, which will produce little or no alteration in his feelings, whether of exhilaration, *immediately* after dinner, or of discomfort, *some hours* after this meal.——Speaking generally, the dyspeptic invalid may commence with from four to eight ounces of plain animal food, with stale bread, and few or no vegetables, at two o'clock, drinking after his meal a table spoonful of brandy, with two or three wine-glassfuls of water."

Farinaceous food is the best, and grit gruel is its best form; a little sugar, and a tea-spoonful of brandy, in each cup, may be permitted. The patient may, as he improves in health and comfort, gradually improve his regimen, by adding beef-tea to his gruel; then, by venturing on half an ounce or an ounce of chicken, increasing the quantity of chicken to six or eight ounces, with stale bread, but not too much of that; no particle of any other vegetable matter should be ventured on. Little drink ought to be used; if he can only bear an ounce of chicken, he may have a teaspoonful of brandy in a wine-glassful of water; if eight ounces of chicken, then a tumbler of water, and a table-spoonful of brandy, is a fair allowance.

Mutton or game should succeed poultry; but in this experiment, he should keep to the "*quantity* which produces *no languor after eating, no unpleasant sensation of mind or body during digestion.*" Water is the best of all drinks, if the patient will be satisfied; but the next is the dilute mixture of brandy and water.

In regard to medicinal treatment, we cannot follow the author out, in his highly interesting details. It is important to avoid harsh purgatives; those medicines which procure loose, watery stools, are improper; the object is, to procure formed evacuations once a day; to allay irritation of the system generally, as well as of the alimentary passages, principally by medicines containing hyosciamus—by warm bitters, and, lastly, nitrate of silver; for the observations on which, we refer to the Quarterly Summary of this number.

ARTICLE XII.—*An Oration delivered before the Philadelphia Medical Society, pursuant to appointment.* By R. LA ROCHE, M. D., Member of the American Philosophical Society, &c. February 3, 1827. Published by the Society. Philadelphia. 1827.

THIS address consists of two parts, the one devoted to enforcing the essential character of physiology to the study and practice of medicine; the other an exhibition of the advantages which would result to the profession and to our medical schools, from a more extended course of instruction, and, in particular, from the introduction of a chair of physiology or the institutes of medicine.

These are such copious matters, that the orator himself has evidently found it difficult to restrain himself within the proper bounds. Like all really good subjects for public addresses, this has rolled forward such a tide of ideas, arguments, and feelings, that it has been found necessary to check them in mid career; and the oration has, from this cause, somewhat of a truncated effect. It will, of course, be impossible for us here to give a view of the matter, and we must confine ourselves to the simple expression of an opinion.

We hold, then, that an attention to physiology, as far as it was understood, has always, from the most remote antiquity, characterized physicians of superior understandings, and sound, practical sense. However misled by those prevalent systems of philosophy which deluded the strongest minds of the day, in every then existing branch of human study, we constantly find that those who were distinguished for powerful intellect, always felt the necessity of applying themselves closely to an investigation of the healthy state of the functions, and of their modifications by disease. Atoms or humours may have led them astray; they may, as in some instances, have sought for the explanation of the human functions in the seventh heaven, instead of the intestines and lungs, and in the powers of numbers, instead of those of the animal tissues; or, in other times, they may have been immersed in a darkness, deep, indeed, but still preferable to a false light; whole lives, the lives of philosophers, may have been wasted, without leaving any other memorial than the recognition of their names in turning over the pages of some history of medicine; but still, right or wrong, dark or illuminated, they have always sought, searched diligently for the interpretation of nature, for the knowledge of that foundation of medicine, the structure and vital processes of the human body. HIPPOCRATES, GALEN, CELSUS,—STAHL, BOERHAAVE, HALLER, HUNTER, BICHAT,—which of these was not a physiologist? did not take a pride in physiology? did not make improvements in it, or, at least what he considered as valuable improvements? In fact, the explanation and cause of this are very obvious: such is the natural course taken by the human mind in investigating the practice of medicine, when it has not been misdirected by the authority of established schools, and distinguished names. We may safely appeal to the common sense of mankind, whether a person can possibly be a judge of disease, who does not understand health. "No man can ever be fitted for the exercise of the medical profession, who has not made himself minutely acquainted with the nature and extent of deviations from health; and what these deviations are, he only knows, who has most carefully and accurately studied the healthy functions in their ordinary states and operation." Such, in substance, is the opinion of CELSUS; and such is that which naturally occurs to every unbiassed mind. In fact, the doctrine, or theory, if such it can be called, which would erect diseases into so many entities—that, against which, under the shield and title of Nosology, Dr. RUSH combatted so long and so strenuously in America, and which is now the object of such earnest attacks from the modern school in France, has seldom, we think, possessed very numerous advocates among the more thinking portion of the profession. In times of warm discussion, men of superior minds, influenced perhaps by the spirit of party, have taken this stand; but in the ordinary quiescent state of medical opinions, we apprehend that the close and daily inspection of nature has led, insensibly but inevitably, to opposite modes of thinking, and the mere nosologists have been only those to whom the medical profession was an affair of routine—simply a means of gaining their daily bread, to whom it was convenient to have all their duties reduced to explicit and universal rules, in order to save them, as far as possible, the trouble of thinking. The mathematician finds his situation on the trackless ocean, by a calculation found upon demonstrable principles and intelligible methods of reasoning; but to the ordinary seaman, who does not wish to be troubled with the doctrines of spherical trigonometry, it is far more convenient to have the necessary process reduced to simple and general rules, so that he can "work his lunars" without presuming or pretending to understand the grounds on which he does it. So, to him to whom medicine is a mere means of gathering fees and accumulating wealth, that body of medical doctrine has sometimes been thought the most accommodating and convenient, which furnishes précise rules for every case, and enables the mind of the practitioner to be undisturbed in its concentration upon the great business of human life, technically styled, "the main chance." To others, however, disease appears under such an infinite variety of modes and forms, that they find it impossible to make it coincide with definitions, or to compound, from the various modes of treatment given for each of the several maladies which make up the case, such a practice as will apply consistently to them all. It is one of the most ordinary observations heard from practitioners of experience and understanding, that the longer they practise the less becomes their confidence in their own judgments, and the more intricate and obscure do the maladies appear which it is their duty to treat. This remark, drawn from the uncertainty and insufficiency of the general descriptions of disease which are given us in our books, harmonizes admirably with the advice of the venerable RUSH, to study "the state of the system," and to "equalize excitement," without seeking to make nature square with any previously described character, or to expel from the living body any entity which sate brooding like an evil spirit in the vitals, and requiring to be exorcised by a regular process. To increase the usefulness of these precepts, however, were wanting those more accurate inquiries into the nature of many important affections, which have been produced by the industry of later years, and, in particular, the whole natural history of the inflammations of the alimentary canal. We consider the modern opinions, then, so far as they may not have been unduly extended by the force of overpowering circumstances, under which their distinguished promulgator stands, not so much as a revolution, as an "instauratio ab imis fundamentis,"—as a recognition, explanation, defence, and noble augmentation of that which has been the true doctrine of all medical philosophers, from the earliest to the latest days.

We have now but little room for the remaining part of Dr. LA ROCHE's address. Of the importance of copiously teaching that which is the foundation of medical science, but little proof need certainly be alleged. Yet this strange anomaly do most of the schools of the United States now present; and in our own celebrated university, after the failure of the unnecessary attempt to force two courses of lectures into a single period, the present professor has, very wisely and justly, resolved to omit one of them altogether, and to confine himself alone to the more absolutely essential one. The foundations unquestionably support the house; but a house without foundations, if placed upon a smooth surface, will certainly stand for a time. The splendid offer of this distinguished physician to endow a professorship of the institutes out of his private purse, is noticed in a dedication, in language certainly not stronger than that uncommon proof of liberality deserves. The orator adverts to the well known fact, that our medical schools have, during a very long period, made no advance of any importance in the number and extent of the means of education furnished by them to the students, or in the acquirements demanded of the latter for graduation. Why, in such a growing and improving country as this, exactly the same branches should be thought necessary that were so thirty years ago, is indeed difficult to ascertain; and why the rapidly extending resources of the American profession must not be allowed to show themselves in augmenting the skill of our rising physicians, as well as in the increased facilities afforded for furnishing six good courses of medical lectures in every town of the nation, we cannot see.* Dr. L. thinks the proper remedy to lie in the *public opinion* of the medical profession itself; that it is to us that the public at large, including the trustees of colleges and universities, look for information on this subject, and that the spirit of improvement is alive, and must, at no remote period, prevail over the contracted views, prejudices, and supineness of those who now withstand it.

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* *University of London.*—The *Council* hereby give notice, that they have resolved to appoint the following Professorships, as being those *more immediately requisite* at the commencement of the Institution.—1. Greek Language, Literature, and Antiquities.—2. Roman Language, Literature, and

"Of the manner in which this desired object is to be accomplished, I leave to abler hands to decide; contenting myself here with simply remarking, that not a few advantages would be likely to result from a general convention of delegates from every medical institution of the country;—the idea of which has originated in one of the eastern states, and cannot fail to meet the approbation of every sincere lover of our art. By such a plan, the voice of the profession from Maine to Louisiana, will be heard, and the necessity of additional requisites, independently of other points of no less moment, will be fairly discussed, and I dare hope, established beyond the possibility of contradiction."* B. H. C.

Antiquities.—3. English Literature and Composition.—4. French Language and Literature.—5. Italian and Spanish Languages and Literature.—6. German and Northern Languages and Literature.—7. Elementary Mathematics.—8. Higher Mathematics, and Mathematical Physics.—9. Experimental Physics.—10. Chemistry.—11. Zoology and Comparative Anatomy.—12. Application of Physical Sciences to the Arts.—13. Logic, and Philosophy of the Human Mind.—14. Moral and Political Philosophy.—15. Jurisprudence, including International Law.—16. English Law, with, perhaps, separate Lectures on the Constitution.—17. History.—18. Political Economy.—19. Anatomy.—20. *Physiology.*—21. Surgery.—22. Midwifery, and Diseases of Women and Children.—23. Materia Medica and Pharmacy.—24. Nature and Treatment of Diseases.—Application from candidates for the professorships, will be received until the 1st of May, 1827.

T. A. Cox, L. L. D., *Hon. Sec'y to Council.*

Thomas Coates, *Clerk.*

* "Circular.—*Berkshire Medical Institution, December 29th,* 1826.—Sir—The Faculty of the Berkshire Medical Institution having received with much satisfaction, the proposals made by the Medical Societies of Vermont, New Hampshire, and Massachusetts, for the improvement of medical education, by producing an uniformity in the qualifications of candidates for medical degrees and licenses, most willingly acquiesce in many of the propositions submitted to them; and considering the importance of this subject to the whole community, and the advantage which would be derived from a free interchange of opinions on these and other subjects having the same general bearing which might be suggested, they think that a convention, as proposed in the circular of the Massachusetts Medical Society, would be the best mode of discussing these topics.

"Many reasons will present themselves to every one, why a National

ARTICLE XIII.—*Observations on the Efficacy of the White Mustard-Seed, in Affections of the Liver, Internal Organs, and Nervous System, and on the General Management of Health and Life.* By CHARLES TURNER COOKE, Consulting and Operating Surgeon, at Cheltenham. 3d edit. Gloucester, 1826. pp. 120. 8vo.

WE are so fully persuaded of the value and necessity of the axiom, *ne quid nimis*, that we were, at first, tempted to laugh outright at the pretensions set forth in this book, in favour of the white mustard-seed; but the evident philanthropy of the motives, and the strong vein of good pathological sense which runs through the work, engage us to receive, as far as we dare, recommendations, even so sanguine as the following: The use of mustard-seed "deserves to be hailed as one of the most decided discoveries of general usefulness, and applicability, that has ever been dispensed to suffering man; yet, more, (to speak the language of one not less benefited by its agency than myself,) I fully expect that it will considerably lengthen human life in this kingdom, and finally be adopted throughout the world." p. 73.

As this article affords us small space, we must leave all remarks, and begin to give some account of the book.

In March, 1824, Mr. JNO. TURNOR, of Stoke-Rochford, near Grantham, published, in newspapers and in single sheets, an account of the uses of

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Convention should be more useful, and accomplish the purpose more effectually, than any which is merely sectional—they apprehend that those Institutions which are situated on the borders of that section of country from which the proposed convention is to be formed, may have some conflicting interests to prevent them from entering upon so laudable an object —they might not readily comply with proposals which would have a tendency to induce students to resort to other Institutions, where the requisitions are less—this would be prevented, if all the Medical Institutions, or the most important of them, were to send delegates to a general convention. In order to do this, however, it would be necessary to appoint some more central place for the meeting, perhaps New York, and to fix on some more distant time.

"They merely make these suggestions for the consideration of your , by no means intending to dissent from the proposition of the Massachusetts Medical Society.

"Should it still be thought expedient, they will appoint a delegate to represent them at Northampton, on the second Wednesday in May next.

"By order of the Faculty.

"JOHN P. BATCHELDER, *Dean*."

mustard-seed, in order to diffuse the knowledge of its value among all the classes of the population. This tract is reprinted, verbatim, in Mr. C.'s work, the object of which is, mainly to explain and enforce the sentiments of Mr. Turnor's observations; and we conceive it to be our duty to lay the greater part of it before them, premising, that Mr. Cooke speaks in the following manner of his friend, Mr. Turnor: "He is as much above every possible temptation to empiricism, or to disingenuousness of procedure, as all who excuse or encourage either, must, in the same nature of things, be below his friendship."

The tract is entitled, "Observations on the efficacy of White Mustard-Seed, taken whole." Mr. Turnor says, "In the month of July, 1822, I made trial of the white mustard-seed, merely as an aperient; when the generally improved state of my feelings, which soon followed, inclining me to give it credit for other medicinal properties, of at least equal value, I gave it to some of the sick poor in the neighbourhood, and with a success which excited my astonishment. From that time to the present, I have been in the habit of recommending it very generally, and the opinion which I have always entertained, is more fully confirmed—that the public is not aware of its extraordinary powers, nor of the very great variety of cases to which it is applicable; and that in order to its adoption as a remedy for disease, its virtues require only to be known."

We shall condense the following catalogue of its virtues, which, like that of the Harlaem oil, occupies two pages.

"The white mustard-seed is an almost certain remedy for all disease connected with disordered functions of the stomach, liver, and bowels;" and, as branches thereof, in tendency of blood to the head, head-ache, weakness of the eyes and voice, and hoarseness; asthma, cough, indigestion, heart-burn, cramp of the stomach, debility, and pain or soreness at the pit of the stomach; scanty and redundant flow of bile, obstructions of the liver, gravel, scanty urine, and other renal complaints; relaxed and irritable bowels, flatulence, costiveness, rheumatism, lumbago, dropsy, palsy, anorexia. "In ague, gout, rheumatic fever, epilepsy, scrofula, scurvy, erysipelas, in tic doloureux; in recovery from small-pox, typhus and scarlet fevers, and other severe diseases connected with a depraved state of the interior, it has been taken with very considerable advantage." For the lumbricus and ascaris, it is incomparably "the best remedy hitherto discovered," &c. &c. p. 12.

Next comes a case: A man, at 52 ætat., attacked with pain in his left side and lower part of his body, took calomel, rhubarb, oil, &c. without advantage. Emetics, bleeding, blisters, and seventy-two hours of perspiration, abated the pain, and left him weak and emaciated; for two years after, violent returns of pain took place, in spite of professional men and their medicine; he was undermined in constitution, and had the appearances of "general decay." In November, 1822, he tried mustard-seed; in a few days, the pain ceased, and has never returned. The patient got rid of some calculi, which probably had a large share in bringing about this "state of wonderful improvement." p. 14.

Mr. T. next proceeds to show, that it not only can cure, but prevent diseases; and tells us of his friend, who, for five or six years previous to 1825, had been regularly attacked with asthma, in June or July, and the patient was generally confined, after each attack, nearly three months. In March, 1825, he began to take the mustard, a dessert spoonful every day, one hour after dinner; and has not only never had a paroxysm of asthma since, but his health is uninterrupted by any ailment. p. 15.

"In the mustard seed are combined, a valuable aperient and equally valuable tonic; and thus, while it affords the most salutary and comfortable relief to the bowels, it never weakens, but, on the contrary, always strengthens, in a very remarkable degree, both those organs and the stomach, and ultimately the whole system. Its efficacy probably consists in a communication of energy and activity to those movements of the canal, by which the aliment is propelled; and in this way, perhaps, it operates in animating and improving those secretions of the stomach, pancreas, and liver, by which digestion and chylification are effected." p. 18.

"The mustard seed is always to be swallowed whole, and either alone, or in a little water, warm or cold." p. 20.

If some boiling water be poured over them, the seeds are soon covered with a mucilage, which makes them easy to be swallowed, after all the water is drained off.

"Generally speaking, three doses should be taken every day, without intermission; the first, about an hour before breakfast; the second, an hour after dinner; and the third, at bed-time, or an hour before." p. 20.

The quantity in each dose must be determined by the effect produced on the bowels, which are not to be purged, but maintained free and open. Each dose should be so large, as that the whole taken in one day, may operate once the next. This is the whole art of using the seeds. Generally speaking, two or three large tea-spoonfuls, in each dose, will procure the desired effect; some require less, but some will require a table-spoonful.

The seed must be used in this manner "for the space of two, three, four, or six months;" but in many instances, a much shorter period will produce the conviction of "its extraordinary efficacy, and singular value," &c. p. 25.

There are rather more than a hundred pages of Mr. Cooke's pathological and practical observations, intended mainly to "bear testimony to the truth of the tract, and to account for the seeming absurdity of such a classification of disordered states." With these we have nothing to do, except to say, they are sensible and discreet; and that the book closes with an appendix of a correspondence with persons who have been beneficially using Mr. Turnor's and Mr. Cooke's advice in relation to mustard-seeds.

ARTICLE XIV.—*An Elementary System of Physiology.* By JOHN BOSTOCK, M. D. Vol. II. London. 1826, 8vo. pp. 643.

THE first volume of this work appeared in 1824, and the medical public will rejoice to learn, that this second volume is soon to be followed by a third, from the same distinguished author, whose elaborate learning in every branch of physiological researches, as well as his known candour and impartiality, make him peculiarly well fitted for preparing a good English system of physiology, a work not yet extant. Dr. BOSTOCK pursues the same method in the second, which he adopted in the first volume; the references are, however, more full and instructive, if possible. We doubt not, that an American edition will be given of this second volume, by the enterprising publishers, to whom we are indebted for the cis-Atlantic edition of the first. It is what may be called a parlour book, always entertaining and instructive.

ARTICLE XV.—*A Manual of Chemistry, on the Basis of Professor Brande's; compiled from the Works of Brande, Henry, Berzelius, Thomson, and others. Designed as a text book for the use of Students, and Persons attending Lectures on Chemistry.* By JOHN W. WEBSTER, M. D. Lecturer on Chemistry in Harvard University. Boston, 1826. 8vo. pp. 603.

THE design of the present compilation, as explained in its title, is to embrace in one work, of reasonable limits, the more important parts of the most esteemed chemical systems of the day. Accordingly, it consists of excerpts from the works of BRANDE, HENRY, URE, THOMSON, and others, interlarded with matter in the proper language of the compiler. The arrangement, which resembles that adopted by Dr. HENRY, consists in the division of the elementary bodies into three classes; namely, electro-negative substances, electro-positive substances, and metals. From this account of the work, it might be inferred, that Dr. WEBSTER's task was exceedingly simple, having his arrangement and matter prepared, as it were, to his hands; but we are by no means disposed to depreciate the value of his labours, being fully convinced, that compilations like the present, to be well executed, require extensive knowledge of the subject treated of, and the exercise of much judgment.

From the cursory examination which we have given to Dr. WEBSTER's volume, we are disposed to believe, that he has performed the task which he has undertaken, with commendable success. The more valuable matter of the works from which he has culled, has been extracted, and connected into a treatise, with considerable judgment; and hence, we are willing to admit, that, as a concise elementary work on chemistry, it has advantages not possessed by the treatises of BRANDE or HENRY, which have been, heretofore, the most esteemed in this country.

We are still of opinion, that the performances of BRANDE and HENRY are excellent in themselves. But they have peculiar merits and defects; and it may be easily conceived, that a writer, seizing on the best features of the two works, and combining them into one, may produce a third, more concise, and better adapted for learners, than either.

Both the works above alluded to, may be considered as too voluminous for text books. With the exception of the American edition of BRANDE, they extend to more than one volume, and are, therefore, not convenient for following lectures.

With these general remarks on the character and texture of Dr. WEBSTER's book, we proceed to make some comments on its details.

We are glad to find that Dr. WEBSTER adopts the hydrogen unit for proportional numbers, whenever he gives the composition of substances in such numbers. We are satisfied, that this is the correct system, and must, in the end, obtain universal assent.

With reference to equivalent numbers, we must be permitted to express our regret, that no table of them has been given in the present work. No plea of the necessity for brevity can justify this omission, when Dr. W. has sometimes included in his work, accounts of substances of doubtful importance; such, for example, as the hypo-sulphates and hypo-sulphites, not to mention other classes of compounds. With regard to the equivalent numbers themselves, given in the course of the work, it has not happened to us to observe more than one, not in conformity with the latest determinations. We allude to the number for iodine, which is given at 125; while the latest determination, (that of Dr. THOMSON, in his First Principles,) makes it 124.

As connected with equivalent numbers, we shall here notice the manner in which the theory of volumes is applied. In conformity with the excellent usage of Professor BRANDE, the composition of a portion of the gases is expressed by diagrams, in which the relative bulks of the constituents are represented by geometrical figures, while the weights of such bulks are denoted by numbers printed within them. Why the same plan of representation has not been applied in all cases of gaseous combination, we cannot imagine; and for this reason, that we should suppose that the great advantages of this mode of representation must be felt by every one, who has been engaged in teaching the science.

While it is easy to understand, that we may have a series of numbers, expressive of the proportions in which gases combine in weight; it cannot be difficult to conceive of a similar series, denoting their proportions of combination in bulk; and the latter series, which might be called equivalent volumes, may be represented, after the manner of Mr. BRANDE, by geometrical figures. It is further evident, that if the equivalent volume of any gas be assumed to represent the bulk of a quantity of such gas, denoted by its equivalent weight; then, on that assumption, the equivalent volume of every other gas will represent the space occupied by a quantity of such gas, expressed also by its equivalent weight. Hence, by having two such series of numbers, we may for any gas, substitute its equivalent weight for its equivalent volume, or conversely, without any possible error; since these equivalents severally represent the *same* quantities of the respective gases, viewed under the two relations of weight and volume.

There is a disposition in most of the modern chemical writers, to adopt numbers to represent volumes, made up with reference to a series; but in many instances, they employ independent ratios, that is, proportions, correct for the particular gaseous compound, intended to be represented, but which cannot be linked with ratios, previously employed for other gaseous compounds, these ratios being expressed in numbers, either too high or too low to permit of the catenation. When the equivalent volumes are used, there is also a disposition to set out with hydrogen as unity in volume, as well as in weight; and then the volume of all the other simple bodies, which are either gaseous, or susceptible of being gasefied by combination, come to be represented by unity also, with the single exception of oxygen, which becomes denoted by half a volume. This plan, in the general, is adopted in Dr. WEBSTER's book, in which oxygen is usually represented by half a volume, and we are thoroughly convinced that it is the best; but we regret to find that it has not been followed out. Thus, at page 135, we have this statement:—"One volume of ammonia is resolved by electric decomposition into two volumes of a mixture of hydrogen and nitrogen, consisting of three volumes of hydrogen and one volume of nitrogen." Here we would prefer to use the equivalent volumes, and say, that two volumes of ammonia become four volumes of a mixture of hydrogen and nitrogen, consisting of three volumes of hydrogen, and one volume of nitrogen; for it is evident, that, in the statement of our author, the word volume is used in two senses, and that it might create a difficulty with the student to understand how two volumes could consist of four volumes, and lead him to the erroneous conclusion, that the two volumes must be doubled in bulk. The diagram for ammonia, however, is correctly given.

Again, Dr. WEBSTER copies the following from Dr. HENRY: "One volume of cyanogen = two volumes charcoal and one volume nitrogen, decomposes *one atom* of water = one volume of oxygen and two volumes hydrogen." Here, to preserve the equivalent character of the quantities, the words in italics ought to be, *two atoms;* and to follow out the reasoning in the next paragraph, in unbroken equivalent volumes, the quantities given, with our correction, ought to be doubled.

Speaking of the composition of carbonic oxide, Dr. WEBSTER adopts the following statement from Dr. HENRY: "On the theory of volumes, it consists of one volume of oxygen + one volume of gaseous carbon, the oxygen being in such a state of expansion as to occupy the space of two volumes." This is a very injudicious adoption from Dr. HENRY, since the idea intended to be conveyed is very obscurely expressed. The passage is intended to mean, that the gas in question consists of one volume of oxygen+one volume of gaseous carbon, the oxygen being deemed to have the bulk to which it is expanded in the gas, this bulk being the double of that which it has when uncombined. But how much better would it be to say, that carbonic oxide consists of one volume of gaseous carbon, and half a volume of oxygen, the volume and a half being condensed into one volume? or that half a volume of oxygen, when combined with carbon, so as to form carbonic oxide, becomes one volume of this oxide?

Dr. Webster says, p. 190, "Carbon and hydrogen combine and form olefiant gas, consisting of one proportional of carbon+one of hydrogen. Its composition will be 12 carbon, } two volumes of each condensed to
2 hydrogen, } one.
—
14."

And here it may be asked, that if olefiant gas consists of one proportional of each of its constituents, why is it not correctly represented by 6 carbon +1 hydrogen = 7, equivalent to one volume of each, condensed into half a volume? Can it be necessary to resort to a duplication of the equivalents in weight, for the purpose of having a corresponding duplication of the equivalent volumes, in order to avoid representing the resulting volume by half a volume? We should think not; and so far from its being inconvenient to represent the combining volume of olefiant gas by half a volume, it must be so represented in the system of volumes here advocated, and which is adopted in the main by Dr. Webster himself. Indeed, he seems to have felt the propriety of this volume-representation for olefiant gas; for in a diagram given in the next page, he represents it by half a volume.

Under the nitrous oxide also, Dr. Webster doubles the volume-equivalents, though the electrical analysis given, would naturally lead to the statement of the simple equivalents, and though the diagram subjoined is in conformity with such equivalents.

Protoxide of chlorine "explodes by a gentle heat, and five parts in volume become six, consisting of a mixture of oxygen and chlorine gases, in such proportions, that" protoxide of chlorine "must be composed of two in volume of chlorine, and one of oxygen, *the latter being condensed into half its bulk.*"

This extract has been adopted from Dr. Henry, evidently without sufficient examination; for we believe, that Dr. Webster, on reflection, will be disposed to admit, that the words in italics are, to say the least, very obscure. We would be disposed to denote the facts connected with the composition of this gas, in the following manner:—a volume and a quarter of protoxide of chlorine, exploded by heat, become a volume and a half, consisting of a volume of chlorine, and half a volume of oxygen. Here then it is seen, that the increase of bulk, which the chlorine obtains, is equal to half the bulk of the oxygen which it receives, and it is this circumstance which has led Dr. Henry, and after him Dr. Webster, to say, that the oxygen is condensed into half its bulk. But we cannot help believing, that this is an unusual, not to say unphilosophical, view of the subject. If we had a gas composed of two volumes of oxygen+one volume of chlorine, condensed into one volume; then we might say, with strict propriety, that the oxygen was condensed into half its bulk, but certainly not in the case of protoxide of chlorine.

Before dismissing the subject of combination by volumes, we may mention several errors, which we have detected in the statements of the composition of some of the gases, the correction of which may be adviseable in future editions of the work. Thus, the symbol given to represent nitric oxide, corresponds with one volume of nitrogen+one volume of oxygen=*one volume of nitric oxide*, instead of, *two volumes of nitric oxide*. It is singular that Dr. Webster, in copying the mode by which this gas may be decomposed from Brande, should subjoin his symbol, erroneously altered. It is either a typographical mistake, or else Dr. W. has been misled by this ambiguous expression of Brande, "that one volume of nitric oxide is resolved into equal volumes of oxygen and nitrogen."

In the account of nitrous acid gas, there is an inconsistency; the text stating that the constituents of the acid are condensed into about half their original volume, and the symbol given, indicating that they are condensed into two-thirds of their original volume.

At p. 180, we have this passage: carbonic acid "may, therefore, be considered, under this aspect, as constituted of one volume of *oxygen*+half a volume of *carbonic oxide*, condensed into one volume." The words in italics ought to be transposed, so as to make the latter part of the sentence read thus: "constituted of one volume of carbonic oxide+half a volume of oxygen, condensed into one volume." The paragraph in which this error occurs, is copied from Dr. Henry, and only varies from the original in the erroneous transposition noticed. We are, therefore, disposed to consider it a typographical error.

Dr. Webster copies from Dr. Henry, that the specific gravity of muriatic acid, when obtained by means of Wolfe's apparatus, and especially when the bottles are surrounded by ice or snow, approaches to 1.500. This is an error in Dr. Henry, or, if founded on any authority, at least an obsolete statement. The maximum specific gravity of muriatic acid is generally given at 1.21. In winter, Dr. Thomson has obtained it as high as 1.212; and this fact is given by Dr. Henry, in the next page to that in which he says it may be made to approach in specific gravity to 1.5.

At page 175, it is said, "There are *two* compounds of carbon and oxygen; the carbonic oxide, and the carbonic acid." We should say, there are *three*, placing oxalic acid among the number.

Dr. Webster follows Mr. Brande, in supposing, that there is no such combination as light carburetted hydrogen, as a definite compound; though its existence appears to be so well made out by the observations and experiments of Drs. Henry and Thomson. Accordingly, Dr. Webster recognises but one combination of carbon and hydrogen; while we are disposed to believe that there are *three*, namely, olefiant gas, light carburetted hydrogen, and naphthaline.

Dr. WEBSTER's book is well printed, furnished with numerous side notes, and embellished with seven large plates. It would be an improvement, however, to have substituted wood-cuts, in the body of the page, for the numerous figures in the copper-plates. This plan, which has been adopted with so much success by Mr. BRANDE, facilitates reference, and enables the student to examine one figure at a time, without the confusion arising from numerous figures crowded into one plate.

In a medical journal, we should not feel ourselves justified in noticing an elementary work on chemistry, intended for general readers, were it not the usage in this country to adopt such treatises for the instruction of medical students. But it is much to be desired, that a good work, adapted to the wants of the medical student and practitioner, were prepared, from which all irrelevant matter were carefully excluded, and embracing only those facts which have an application to medicine and pharmacy, with such additional ones, as may be necessary to the elucidation of the principles of the science. Such a work would be, in the strict meaning of the term, a medical chemistry. Heretofore, so far as we are informed, there have been made but four attempts to prepare works of this kind. We here allude to Dr. ORFILA's Elémens de Chimie Médicale, published at Paris in 1817; Dr. BACHE's Chemistry for Medical Students, published in this city in 1819; M. JULIA-FONTENELLE's Manuel de Chimie Médicale, published at Paris in 1824; and Dr. PARIS's Elements of Medical Chemistry, which appeared in London in 1825. So long, however, as chemical treatises of general import, continue to be the text books of medical students, we shall consider them as proper subjects for medical review.

QUARTERLY SUMMARY

OF MEDICAL AND SURGICAL INTELLIGENCE.

I. ANATOMY.

1. *Absence of the Gall bladder.*—M. Godelier, surgeon in chief of the military hospital of Rochelle, gives us, in the Journal Universel, Sept. 1826, an account of a young man, who, having enjoyed good health during his life, was killed by a fall, in the 26th year of his age. On dissection, the fossa, usually occupied by the gall bladder, was not to be found; the surface of the liver being there as smooth and even as on its convex portion presented no trace of the existence of a gall bladder. The hepatic duct being carefully dissected, was found about double the common size. There was no cystic duct. In order to ascertain if there might be a concealed and misplaced biliary cyst, the liver was cut into small pieces, but no gall bladder could be detected. This case proves that man may enjoy good health if born without a gall bladder; and yet we know, that obstructions of the cystic duct by calculi, and the complete filling up of the cyst with the same materials, even where no bile seems to enter it, are capable of destroying the health and even life itself. We lately examined the gall bladder of a patient, which was closely contracted on a calculus about as large as the thumb. The patient died with jaundice of several months duration, after becoming greatly emaciated, and in some parts of the skin nearly as black as a negro. The hepatic duct, however, remained open.

2. *Monster.*—Mr. G. St. Hilaire presented to the Academy, in September, a monster, which lived three quarters of an hour after its birth. The peculiarity in this case was, that the mass of intestines was retained outside of the abdominal cavity, by an accidental adhesion. It had neither sexual organs nor anus.—*Rev. Med. Oct.* 1826.

3. *The Human Fœtus.*—Dr. Pockels has had within the last few years opportunities of collecting more than fifty specimens of the human fœtus, under six weeks of gestation, and found four to be perfectly formed, (conformés,) which had been expelled from the eighth to the sixteenth day after conception. His method of proceeding in their examination is detailed in the Archives Generales, together with a minute account of the changes which take place from the earliest traceable period of its uterine existence. Such as examine Dr. Pockel's account, will more readily admit the accuracy of Mr. Bauer's and Sir Everhard Home's relation of their microscopic man, in the Philosophical Transactions of London.—*Archives, Oct.* 1826.

4. *On the Communication of the Absorbing with the Sanguiferous vessels.*—Experiment 1.—In a young man who died with phthisis, Dr. Rossi injected with mercury the lymphatic vessels passing out from the intestinal glands on the left side, after having tied the thoracic duct about four inches above the diaphragm: when the thoracic duct below the ligature was full, he suspended the operation. No lymphatic vessel was injected in the mesentery; nor was any one found emptying itself from the principal ramifica-

tions of the vena portæ. "The vasa efferentia of the inguinal glands in which the tube had been placed after having passed the external and primitive iliac glands, went, as is usual, to the inferior lumbar glands, forming a plexus, and lastly to the superior lumbar glands: from these two, the lymphatics went out, and, reuniting in a few trunks, gave origin to the receptacle of Pecquet. From the same glands I also saw three vessels take their origin, not very well filled with mercury, and not very small; which vessels, instead of going to the thoracic duct, emptied themselves evidently, one into the vena cava, just as it emerges from the posterior curvature of the liver, one at the beginning of the left emulgent vein, and the third again in the vena cava, near the termination of the right spermatic vein." Dr. R. next secured the places where these vessels terminated, with ligatures; upon reapplying the injecting tube, they became filled with mercury.

These vessels had no valves, which are always found in lymphatic vessels, and never in the blood vessels of the great cavities—hence these were veins.

Upon separating the lumbar and iliac glands from the body, he found numerous small vessels, given off from their lateral and posterior surfaces, which contained some mercury; some leading directly into the vena cava, some into the primitive iliacs, and others into the last lumbar vein but one on the left side, which traverses the lumbar column passing under the aorta: they were a few lines in length, and had the aspect of veins.

Experiment 2.—Many small vessels terminated in the ramifications of the vena portæ, especially in the splenic vein.

Experiment 3.—Injection of the iliac lymphatics, as well as those of the mesentery. Many branches were found emptying into the vena cava, as well as in the ramifications of the vena portæ.

Experiments 4th and 5th.—These were performed on two extenuated bodies. In one the injection was begun above the right knee. The inguinal glands were injected, and the minute veins going from them into the femoral vein, contained globules of mercury, together with blood. He proved that these were veins, and not lymphatics, as they had no valves.

Experiments 6th, 7th, and 8th.—The iliac and mesenteric lymphatics of three bodies injected, and the same branches going into the veins as before, afforded similar results to those above detailed.

"From these experiments, it appears to me, 1st. That mercury injected into the lymphatic vessels, after having traversed the glands, passes into the veins by means of certain vascular branches, which afford a communication between the large veins and the glands themselves.

2d. "That these branches, though having at first sight the appearance of lymphatics, ought to be considered as veins, whose principal office is to carry back the blood which is superfluous for the nutrition of these glands. Mascagni and others have before shown, that in 'many injections of the lymphatic system, the minute veins of the glands are filled.' Mr. Rossi thinks it is clear, then, that the communication between lymphatics and veins does not take place by branches, and infers, that it is probably effected in the ultimate subdivision of these vessels in the parenchyma of the glands. He does not 'positively *conclude*, that no lymphatic trunk communicates directly between the two systems;' but the branches seen by him must be regarded as veins, and not, as they at first sight would appear to be, lymphatic vessels."—*Annali Universali apud London Med. and Phys. Journal, Jan.* 1827.

5. *Circulation in the Spleen.*—Mr. Andral has ascertained that in the splenic *veins* of the horse, there exist numerous openings through the sides of the vessels, by which blood contained in the cells of the spleen may pass directly into the circulation. Hence, the frequently sudden disappearance

of swellings of this viscus may be readily explained by the easy restoration of a free course to the general movement of the blood.—*Archives, September and October*, 1826.

6. *Absence of the Uterus.*—Mr. Renauldin presented to the Royal Academy of Medicine, the genital apparatus of a woman fifty-two years of age. She was three feet six inches in height, and had never menstruated. The exterior parts were of a good conformation, but instead of the neck of the uterus, the finger in vaginam discovered only a small tubercle. The vagina terminated in a sort of cord, leaving a small canal, which constituted the neck of the womb; the body and fundus were wanting. The cord above mentioned communicated with the fallopian tubes, which were very small at the place where they terminated. There were scarcely the rudiments of ovaries.—*Bulletin, Sept.* 1826.

7. *Anatomy of the Uterus.*—Mr. Baudelocque (nephew) presented a womb which contained a tube leading from the right fallopian, and enclosed in the substance of the organ, but opening into the cavity of its neck; the rest of the apparatus was sound.—*Ibid.*

II. PHYSIOLOGY.

8. *Superfœtation.*—At the session of the Royal Academy of Medicine, a fact was stated, in relation to what is called superfœtation. It seems, that a mare, (jument poulinière,) five years old, foaled a horse colt, and in a quarter of an hour afterwards, was delivered of a mule. The animal had been covered by a stallion, and five days afterwards by an ass.—*Rev. Med.*

Is this fact any more wonderful, in a physiological point of view, than the very common one, in which a bitch litters puppies of many varieties, such as the bull-dog, greyhound, spaniel, &c.?

9. *Experiments on Poisoning.*—Mr. Segalas, in a communication to the Academy of Medicine, details some experiments, tending to prove, that poisons produce their effects on the organs more by means of the vessels, and consequently by absorption, than by the intervention of the nerves. 1st. Having cut the spinal marrow, so as to produce paraplegia, he introduced alcoholic extract of nux vomica into the paralyzed parts. Tetanus occurred with as much readiness and energy, as if the nervous system had not been injured. 2d. Leaving the spinal marrow untouched, but having prevented the return to the heart of venous blood from the part in which the poison was inserted, no poisoning was perceptible. 3d. Tetanus occurs after the injection of the poison into the bronchiæ, with equal celerity, whether the eighth pair of nerves have been divided or not. 4th. Nux vomica, deposited in the thigh of an animal rendered paraplegic by the division of the spinal marrow, produced tetanus, not only in the trunk and superior extremities, but also in the palsied parts. 5th. The same effects are produced, whatever be the situation in which the poison is deposited, whether the abdomen, thorax, cellular tissue of the back, the veins, or bronchiæ: palsied parts are, therefore, subject to the action of the poison, as well as those which still retain their nervous relations; the contraction of the palsied muscles is slower, however, and seems not to take place, except as the blood brings the poison in contact with the nerves which animate them. 6th. Having injected the poison into the crural artery of a paraplegic animal, similar results occurred; the convulsions took place first in the muscles of the thigh, and only became manifest in the system generally, after an interval supposed sufficient to permit the poison to reach, by means of the circulation, the spinal marrow. From these experiments, Mr.

Segalas concludes, that the muscles may, in certain cases, contract independently of the action of the cerebro-spinal system—a conclusion, long since attained by Haller, and manifestly a consequence of the vis insita, as contradistinguished from the vis nervosa. Mr. Segalas compliments Fouquier, as having been inspired, when he proposed the employment of nux vomica in palsy.—*Bulletin, Sept.* 1826.

10. *Pulmonary Exhalation.*—MM. Breschet and Milne Edwards have made experiments on pulmonary exhalation, the results of which were communicated to the Royal Academy of Medicine, July 25, 1826, and published in the Revue Medicale for September. Magendie and Nysten had demonstrated the celerity with which various gaseous and liquid matters, placed in the circulation, are expelled by the exhalants of the lungs. The experiments of Messrs. Breschet and Edwards tend to explain this phenomenon. Barry showed, that absorption was prevented, in his experiments, by the action of cupping glasses, (vide vol. i. p. 447, of this work;) and Messrs. B. and E. considering exhalation to be the inverse operation, inferred, that exhalation would be accelerated and facilitated, by every force which should attract the fluids from within, outwards. Inspiration might be this force, and to test it, the following experiments were instituted. A tube was adapted to the trachea of an animal, and the thorax being freely opened, respiration was sustained by a bellows, fitted into the tube; the pressure of the atmosphere in such a case must be always equal on every part of the pulmonic surfaces. Camphorated alcohol being now injected into the peritoneal sac, did not appear in the pulmonary exhalation; while, in comparative experiments on animals with the respiratory organs untouched, it appeared in from three to six minutes. They next exposed a portion of an abdominal muscle, and applying to it an exhausted cup, the surface soon communicated the smell of camphor. Into the crural veins of two dogs, one breathing naturally, the other artificially, as in the last case, they injected essential oil of turpentine. In the sound dog, the pulmonary perspiration soon evinced the presence of the turpentine; and upon dissection, after death, the lungs were more fully impregnated with it than the other organs: while, in the wounded dog, no appearance of turpentine was presented in the pulmonary exhalation, nor did the lungs, after death, show any particular accumulation of the oil in their tissue—all the tissues being equally impregnated. When phosphorus, dissolved in oil, was injected into the crural vein of a dog breathing by the same artificial method, it was detected in the exhalation of the lungs, but was not detected by a cup exhausted over the stomach. This contradiction was explained on the ground assumed by Magendie, namely, that fat oil cannot permeate the finer ramifications of the pulmonary artery, and must consequently be arrested in the lungs.

Messrs. B. and E. also ascertained, that every part of the cutaneous superficies is not equally capable of yielding, under a cup, the odours of substances injected into the body. The skin of the thigh is not as much so as that on the region of the stomach.

From all the foregoing, arises the inference, that the suction force of the thorax, during inspiration, is the cause of the exhalation by the lungs, of such liquid and gaseous matters, as are mingled with the blood, by accident or design.

Independent of the insurmountable difficulty opposed to Barry's theory, by the phenomenon of fœtal circulation, we cannot conceive how such a suction power can be thought necessary; inasmuch as the circulation goes on in fishes that do not breathe by lungs, but whose whole circulation is carried on by means of a single auricle and ventricle, which first drive the blood through a decreasing series of vessels in the gills, and subsequently to the whole body, by an increasing series to arteries—next, a decreasing series of capillaries, to another increasing series of veins. Here, then, a function is carried on, with as much exactness as in a human body, and no apparatus of suction is discoverable, or necessary. We need hardly cite against Mr. Barry, the Syracusan diver, whose power of holding the breath is wholly incompatible with the doctrine of this suction power. The circulation, as well as respiration, must be supposed to cease in this diver, when under the whirlpools of Scylla and Charybdis.

11. *Dr. Dill on Cutaneous Absorption.*—Dr. Dill's paper is in the Medical and Chirurgical Transactions of Edinburgh, vol. ii., and is noticed in the London Medical and Physical Journal, November, 1826. A young man, weighing 142 pounds, 5 ounces and 2 drachms, descended into a bath at 86°: remaining in it half an hour, he was again weighed, and had gained half a drachm. The expenditure which his body was hourly sustaining before the experiment, was two ounces and a half; he therefore gained in the bath ten drachms and a half in half an hour. Dr. Dill accounts for this difference by supposing a cutaneous absorption; our readers, however, will judge whether it was owing to the imbibition of fluid by the cutaneous surface, or to the interruption of the exhalations by the action of the bath.

12. *On the appearance, in the Urine, of Matters taken into the Stomach.*—J. A. Stehberger, under the direction of M. Tiedemann, has made some experiments to ascertain how soon substances taken into the body, may be detected in the urine. The subject of his experiments was a lad thirteen years of age, afflicted with congenital prolapsus vesicæ. The urine was always oozing from the exposed orifice of the ureters, and was collected from time to time, in order to test its contents. Among the substances swallowed, and subsequently detected in the urine, were the colouring matter of rhubarb, that of black cherries, madder, campeachy wood, indigo, gallic acid, tannin of the uva ursi, hydrocyanite of potassa and iron, a constituent part of the elder conserve, which gave the excretion an intensely yellow colour.

The colouring matter of tincture of turnsole, the bitter principle of quassia, the ferruginous tincture of Bestuscheff, and acetate of protoxide of iron, could not be detected in the urine, after being swallowed by the young man.

None of the substances employed as baths appeared in the urine, except essence of turpentine and acetate of potassa; but essence of turpentine communicated to it a violet odour on simple inhalation of its vapour. Neither the aqueous nor spirituous tincture of rhubarb, decoction of campeachy wood, nor solution of gallic acid, appeared in the urine when used as baths.

Madder showed itself in fifteen minutes after being swallowed; indigo in fifteen; gallic acid, twenty; decoction of campeachy wood, twenty-five; colouring principle of myrtle berries in thirty; that of black cherries, forty-five; the astringent principle of uva ursi in forty-five; pulp of cassia, fifty-five; ferruginous hydrocyanite, sixty; and the elder conserve in seventy-five minutes. The author says, that the time of the appearance of an ingested substance in the bladder may vary according to the state of the alimentary canal, the solubility of it in the digestive fluids, &c.

The inhaled vapour of essence of turpentine is manifested in the urine in fifteen minutes, while the odour of violets was not observable till twenty-five minutes after the application of the same substance to the skin.

There was found a period of return or increase, as to the quantity contained in the urine, of colouring or other matter swallowed. This point of time varied considerably: for example, the madder originally was detected in fifteen minutes, then diminished in quantity, but the period for its return was one hour; the black cherries one hour and a half, &c.

The complete disappearance of these matters was also of various epochs. The hydrocyanite of potassa was gone in three-quarters of an hour; indigo, four hours and a half; rhubarb, six hours, ten minutes, &c. These experiments are highly interesting, as from the peculiar state of the unfortunate subject, great accuracy as to time was attainable; the urine could be tested every half minute after the ingestion, if necessary. They serve to show the importance of the kidneys as the guardians, in a great measure, of the blood's purity and usefulness.—*Bulletin, Oct.* 1826.

13. *Sight given to a Person born Blind.*—We regret that we cannot copy out the whole of Mr. JAMES WARDROP's detail of the phenomena which occurred in a lady forty-six years of age, to whom he gave sight by means of three operations for artificial pupil, with which operations, however, we have nothing to do in this place. She was so blind as to be unable to point out the situation of the windows in a light room, but in the sunshine she could tell in what direction the light came. Among other relations of the progress of this lady in seeing, we shall quote the following:

"On the seventh day (after the last operation) she took notice of the mistress of the house, and observed, 'that she was tall.' She asked 'what the colour of her gown was?' to which she was answered, 'that it was blue.' 'So is that thing on your head,' she then observed, which was the case; 'and your handkerchief, that is a different colour,' which was also correct. The tea-cups and saucers underwent an examination: 'what are they like?' her brother asked her: 'I don't know,' she replied, 'they look very queer to me; but I can tell what they are in a minute, when I touch them.'

"On the twelfth day she was advised to walk out, which recommendation pleased her much. Her brother walked with her as her guide, and took her twice round the piazzas of Covent Garden. She appeared much surprised, but apparently delighted; the clear blue sky first attracted her notice, and she said, 'it is the prettiest thing I have ever seen yet, and equally pretty every time I look at it.'

"Nothing particular took place on the seventeenth day; and when her brother asked her how she was, she replied, 'I am well, and see better; but don't tease me with too many questions till I have learned a little better to make use of my eye. All that I can say is, that I am sure, from what I do see, that a great change has taken place; but I cannot describe what I feel.'"

Mr. WARDROP attempted to ascertain, by a few experiments, her precise notions of the colour, size, forms, position, motions and distances of external objects—as she had but one eye, nothing could be learned as to double vision.

When pieces of paper, one and a half inch square, differently coloured, were presented to her, she not only distinguished them, but preferred some to others. When desirous of examining an object, she could not at once find its position, but moved her hand as well as her eye, in various directions, like one groping in the dark. On asking what she meant by different forms, such as long, round and square, and desiring her to draw with her finger these forms on her other hand, and then presenting to her eye the respective forms, she pointed to them exactly; she not only distinguished small from large objects, but knew what was meant by above and below; to prove which, a figure drawn with ink was placed before her eye, having one end broad and the other narrow, and she saw the positions as they really were, and *not inverted*. She could also perceive motions: a glass of water was placed on a table, she approached her hand to it, and when it was quickly moved to a greater distance, she immediately said, "you move it—you take it away."

She seemed to have the greatest difficulty in finding out the distance of any object, for when held close to her eye, she searched for it by stretching out her hand far beyond its position, while, on other occasions, she groped near her face for a distant object.

When a silver pencil case and a key were put in her hands, she knew the one from the other readily; but when placed side by side on the table, though she distinguished two objects, she could not tell which was the key. —*Lond. Med. Rep. Dec.* 1826.

14. *Pulmonary Insufflation, as a remedy for Asphyxia.*—Mr. Leroy D'Etiole has lately been making experiments on pulmonary insufflation, which, instead of resuscitating an animal in a state of asphyxia, may become the cause of its death, if improperly used. His experiments were tried on rabbits and dogs, and subsequently on sheep, as being of a size better fitted to show a correct and comparative result. When the trachea was exposed, a ligature was passed behind it; a canula being then introduced into its cavity, by an incision, the ligature was drawn. M. D'E. then blew, with his own breath, strongly into the lungs of the animal, only once. The canula being withdrawn, the animal was put on its feet. The experiment was tried on seven sheep: four were seized with suffocation in one minute, and died in three minutes; in the other three, the breathing became panting, and the animals died in a quarter of an hour.

The only explanation which can be given of this result, is, that the force which was sufficient to inflate the lungs of the sheep artificially, was strong enough to produce rupture, or preternatural enlargement, of the air cells. The inferences of a practical nature, relate to the treatment of submersion and asphyxia, from a variety of causes, particularly in new-born children.

M. Segalas, also, addressed a letter to the Academy, concerning M. Leroy D'Etiole's researches, above mentioned. M. S. cites experiments of his own, which demonstrate that the energetic poisons, such as brucia, strychnia, camphor, and spirituous tincture of nux vomica, do not, as heretofore supposed, produce death by asphyxia, but in another manner, probably by a special action on the nervous system. An evident proof of this, exists in the suddenness of death in such as perish by the poisons, which is remarkably great; while those which die by strangulation, no matter how complete, yet are more slowly deprived of vitality. In such cases, then, insufflation of air can be of no use, says M. Segalas. We cannot, however, agree with him: it would be manifestly the duty of the physician to use insufflation, even in such cases, since he could never ascertain, à priori, the extent of the nervous affection; a patient might die for want of one single inspiration, which could restore the functions of these very organs, in *some cases.*—*Rev. Med. Oct.* 1826.

15. *Engelhart on the Colouring Matter of the Blood.*—We are indebted to the Edinburgh Medical and Surgical Journal, for the facts in this article, of which we have altered much of the language, for the sake of condensation.

Dr. Engelhart's observations are contained in his essay, which obtained the Gottingen prize for 1825, and seems to have put for ever at rest, the question, as to the existence of iron in the blood; though doubts may still be entertained, as to its being the cause of redness in the red particles.

Fracassati, in 1667, and Mayow, in 1674, learned by experiment, that the difference between venous and arterial blood, was owing to the contact of air. Badia, an Italian, appears to have been the first who detected iron in it: Menghini confirmed his observations, and remarked, that the quantity of iron in the blood was proportional to that of the red particles. Being at first satisfied with learning that iron gave colour to the blood, they did not care to know what form of that metal existed in the vital fluid; till, in consequence of the labours of Sage and Green, they inferred, that it existed as phosphate, and, finally, that it was kept in solution by the free alkali of the blood.

Physiologists have for the most part held this doctrine, with some modifications, as, for example, that since protophosphate of iron has been detected in lymph and chyle, (a colourless salt,) it was inferred, that in blood it becomes the real perphosphate.

BERZELIUS found no iron, after incineration of serum and fibrine; but the ashes of the red particles consist chiefly of oxide of iron, equal to about 0.200 of the original mass.

Dr. ENGELHART drained the clot on bibulous paper, diffused the colouring particles in water, which was evaporated by a heat of 122°; as they still retained some serum, he purified them by adding water, and the colouring particles fell down, coagulated as brown flocks, at a temperature of 149°; whereas serum will not coagulate for a less temperature than 167°.

The colouring particles thus procured, have lost their bright red colour, and form, when half dried, a brownish red, granular, friable mass; and when thoroughly dried, at a temperature between 167° and 190°, the mass is tough, hard, brilliant, black with reflected, garnet red with transmitted, light. It is quite insoluble in water. The mineral acids dissolve a small portion of it; while the *caustic* alkalies, with the aid of heat, dissolve it entirely, and acquire a deep blood red colour. With respect to the action of re-agents on them, two new facts have been noticed by Dr. ENGELMAN: 1st. Phosphoric acid does not alter their colour in solution, any more than it can dissolve the modified colouring matter in the solid state. 2d. Acetate and sulphate of zinc throw down, even from diluted solutions, a dark, red precipitate, which, like the common colouring particles, becomes florid, on exposure to air.

By several processes, of which we have no room to give the details, he established the fact, that iron exists only in the red particles. There is one, however, which we cannot pass over: A stream of chlorine, transmitted through a solution of the colouring particles, destroys their colour, throws down white flocks, and leaves a transparent solution. In this solution, all the usual re-agents demonstrate the existence of a considerable quantity of iron, and some lime. Fibrine and serum show no such results. The chlorine seemed to separate all the fixed elements of the principles; for the insoluble matter thrown down, was always consumed *entirely* by incineration.

From 772 grs. of ox's blood, he obtained 3,80 of oxide of iron, which equals 0,492 per cent. Sow's blood, by a different process, yielded 0,526 per cent.

Our readers may judge, whether so small a proportion of iron as one half of one per cent., can be supposed capable of communicating so intense a red as that of the blood; or explain the various phenomena of colour, in different stages and states of the circulation.

III. PATHOLOGY.

We have somewhat enlarged our article on pathology; considering this branch, as it undoubtedly is, the basis of all sound medical practice. One peculiarity in our summary may probably be the circumstance, that a very large portion, indeed, is compiled from the writings of the French physicians. This arises simply from the fact, that these writers supply us with the greatest part of all that is new and valuable on this subject. The French has now become exactly what the Latin formerly was, the medical language of the age; and access to its stores is now absolutely necessary to every one who would keep pace with the spirit of the times. Most of the valuable British practical and doctrinal works, which have been produced within the last few years, are found, by those who consult the originals, to have drawn a very large part of their useful matter from the writings of the continental physicians; and the language of Bichat, in addition, furnishes us with a key, of extensive and convenient application, to many of the most valuable treasures of Italy and Germany—a key rendered the more necessary by the incomprehensible difficulty which we experience in obtaining the productions of those countries themselves.

Another character of modern pathology, is, the great abundance, perhaps predominance, among the new inquiries at present going on, of morbid dissections. Censures are sometimes heard, cast upon the pathological anatomists, for giving too much time and attention to that which terminates life, instead of the curative means which are to prolong it; but it is hardly necessary to revert to the peculiar character of certainty and fact, attributable to this mode of increasing medical knowledge. In the detail of symptoms, so much depends on the judgment of the practitioner, that incalculable scope is left for differences of opinion, upon even very ordinary cases; but in the appearances of a dead body, when carefully inspected by good anatomists, and men who have accustomed themselves to these investigations, there is much more certainty, and much more uniformity of opinions. Those physicians who the most feel and lament the want of certainty in medicine, are precisely the oldest and most experienced. To reject any means of acquiring knowledge, which may render us more capable of discharging the duties of a very responsible profession, is matter for serious condemnation; but still more to be blamed is he, who rejects, for estimation and conjecture, a large mass of the most certain and positive knowledge which is granted to light us through such a dark and tangled maze as the practice of medicine.

16. *Erosion of the Stomach.*—This occurrence, similar to that described by Mr. John Hunter, as owing to the stomach digesting its own substance after death, is well known to have been referred by the modern pathological anatomists to a diseased process, generally to the *softening* of this viscus, lately described by Messrs. Jœger, Fleischmann, Lallemand, Cruveilhier, Louis, &c. and, appearing to be the same alteration observed by Roederer, Wagler, &c. and Broussais. Dr. Pitschaaft has described this disease, as occurring in *infants*, (vide Rust's Magazine, quoted in the Edinburgh Journal,) and his observations are the more valuable, as those of the French writers are less full in the symptoms, than in the morbid appearances after death.

It only occurs in the children of unhealthy mothers; in those fed too soon, or too much, by hand; and in those whose minds are precocious. The symptoms are, paleness of the countenance; coldness of the skin, with occasional flushes; dulness; and, occasionally, flaccidity of the muscles: then, loss of appetite, excessive thirst, lips dry and swelled, tongue dry and cracked. By this time, the child vomits all his food; the alvine discharges become frequent and loose, and seem to consist of half-digested aliment and slimy matter, like bookbinder's paste with shreds of spinach in it. He is constantly in a lethargic state, from which, however, he is roused by the slightest touch; and his senses continue active to the last. The countenance, when the disease is fully formed, expresses pain, but not of the acute kind; there is a sorrowful appearance about the mouth, the look is languishing, the eye half open, the pupil turned upwards during sleep, and the whole physiognomy resembles that of an old person—apparently, the look of a "little, old man," the "petit vieillard" of the French physicians, an appearance often strikingly impressed on the minds of nurses, in the chronic abdominal complaints of children. The little patient affected with softening of the stomach whines frequently, and is so fretful, as to cry, and toss himself impatiently about, when a bystander looks steadily upon him. The pulse is at first slow and intermitting, and does not become quick till near the close; frequently there is a slight cough, or an erysipelatous affection of the eyelids; the respiration is not much affected at first, but becomes laborious towards the end; the abdomen is rarely much swollen; the urine is very often diminished in quantity.

Dr. P. found the mineral acids useful; but, more recently, has resorted to pyroligneous acid, combined with eight parts of syrup, and sixteen of orange-flower water. The food should consist of barley-water, sweetened with sugar, and used in small quantities at a time.

The Edinburgh analyst remarks, that the above harmonizes well with the descriptions given by Dr. GAIRDNER, of that city, in the Edinburgh Medico-Chirurgical Transactions; but doubts whether a certain diagnosis may be obtained from them.

On the other hand, Dr. BRETONNEAU, of Tours, in his elaborate work on the disease noticed in our second volume, p. 161, under the designation of *dothinentery*, or pustular or furuncular inflammation of the intestines, as well as Messrs. TROUSSEAU and RIGOT, whose attention was attracted to the subject by the perusal of the work just named, have all of them observed this softening of the stomach in the bodies of dogs killed during perfect health. Dr. B. has published a large number of instances in his work as above; and Messrs. T. and R. suggest that we cannot always ascribe to an inflammatory cause the softening found in the mucous membranes of subjects, "particularly," they add, "in infants, whose digestive powers are so active." (Vide Archives, Nov. 1826. p. 345.) This accession of force will be welcomed by those who still advocate the digestive powers of the gastric liquids, and the correctness, in this point, of the observations and judgment of the venerable HUNTER.

17. *Redness of the Mucous Membranes from Settling of the Blood.*—The gentlemen just named have made a considerable series of experiments on dogs and horses, for the purpose of ascertaining the distinctive signs of inflammatory redness, and of that produced by the gravitation of blood. This course they are continuing; but, in the meanwhile, conceive that they have established, in a satisfactory manner, the following propositions; which, as will be seen, by no means accord with a rule, frequently inculcated by the disciples of Dr. BROUSSAIS, that the redness produced by the settling of blood, is confined to the larger vessels:

1. That the *arborescent* injection, that is, the sanguineous redness which occupies, according to the difference of cases, the trunks, the trunks and branches, or the trunks, branches, and twigs (ramuscules) of the mesenteric veins, is the invariable result of the *stasis* of the blood in the depending portions of the digestive tube.

2. That, most frequently, the injection does not extend beyond the venous twigs, in the bodies of healthy individuals.

3. That, frequently, in those who have sunk under an acute disease, if they have not been freely bled, the trunks, branches, and twigs of the veins, and also the villosities themselves, are injected, although there has not existed an inflammation of the intestines.

4. That, sometimes, the blood not only distends, at the same time, both the trunks, branches, and twigs of the veins, and colours the villi, but transudes through the mucous surface itself, although there has not been

any inflammation of the intestine; and this by the simple stasis of the blood in the dependent parts.

The same facts are alleged of the stomach, and the great intestine; though they are here far less conspicuous.

Messrs. T. and R. conceive, that in many of the cases in which, upon the principles of the school of Dr. Broussais, a gastro-enteritis has been found to complicate a previously existing disease, the redness produced by the settling of the blood has been mistaken for the result of a genuine inflammation.

18. *The Duke of Holstein—Oldenberg's prize questions on Yellow Fever.*—These have been announced, and adjudged. The final decision was, as was foreseen, in favour of contagion—exactly what was to be expected in that latitude and longitude. Eighteen answers were presented; six in German, four in French, seven in English, and one in Latin. Three of the English replies came from the United States. We obtain our information from the last number of the Edinburgh Medical and Surgical Journal. The prize was adjudged to one of the German tracts by Dr. Charles Christian Matthæi, of Verden, near Bremen, court physician to the king of Hanover.

Dr. Matthæi furnishes tables, exhibiting an ample comparison of the characteristics of the disease as existing in the West Indies, North America, and the south of Europe; "the most important quotations from *all the authors* who have written upon the subject;" an alphabetical catalogue of all the writers to this purpose; an alphabetical enumeration of all the epidemics of the yellow fever, and another of all the places at which it has been observed; and lastly, maps, "giving an easy view of the propagation of the epidemics in the two hemispheres."

He believes that "the yellow fever appears as a disease sui generis, endemical only in the low countries of the sea coast, but, in a due concurrence of circumstances, *also sporadic* in other places;" that it has "never made its appearance beyond 48° northern latitude, and that a temperature of 72° F. is necessary for its production and propagation;" that it is possible for it to prevail in the north of Germany; that it is liable to generate other malignant diseases, and that the ordinary system of quarantine is the proper resource against it.

Dr. Matthæi's motto is, "*Opinionum commenta delet dies, naturæ judicia confirmat;*" and we are willing to peril the cause of non-contagion upon the principle which he here challenges. Yet the author should recollect, what he cannot but feel, that there are countries where the effect of time on public opinion is slow; and that this must be peculiarly liable to be the case in countries where these questions are incapable of being subjected to the test of actual eye-sight.

The names of the professors at Berlin, who adjudged the prize, as learned a body, we do not doubt, as any in the world, and as competent, did there not exist men who have seen for themselves, are Link, Berendo, Græfe, Knappe, Hufeland, Rudolphi, Horn, Henkel, Siebold, Wolfart.

19. *Jackson on Irritation.*—Our townsman, Dr. Samuel Jackson, has published, in our esteemed contemporary, the Philadelphia Journal, a paper which he had previously read, as a lecture, before the Medical Society of this city, containing a view of the modern doctrine of irritation. Dr. J. may be considered as an entire convert to the views entertained on this point by Dr. Broussais, and his disciples; not undertaking to model them anew in any essential respect, but merely to make occasional extensions and explanations, illustrations from the experience of himself and his friends, and alterations of some of the minor points. His paper may, we think, be considered as a fair setting forth of this beautiful system; and we cannot for a mo-

ment hesitate to express our pleasure, that he has thus laid it before a large part of the medical public.

The paper in question is rather explanatory than argumentative; but this arises in part from the nature of the doctrine to be set forth. We regard the latter as a beautiful theory and terminology; answering, in an admirable degree, that great purpose of medical doctrines, the classification of facts, and the ready presentation of strong analogies, where direct inductions are not to be had. It strongly resembles, in these respects, the body of chemical doctrine promulgated by LAVOISIER, or that more recent production of our own times, the *atomic* theory. It meets a prodigious variety of cases, solves, or at least defines, a great number of difficulties, and forms, we believe, an aid to the medical practitioner, with which, in the present state of science, he is not entitled to dispense.

Dr. J. remarks the confusion existing among writers with regard to the meaning of the term "irritation." Impressed with the necessity of fixing it, he does not enter into the inquiry to which of all its senses it ought to be confined, but assumes it at once to mean "an excess of the natural actions, destructive of the function of the tissue or organ, in which it exists." To this destruction we object, as not a necessary condition.

Function may be *deranged* by a state of things in which there is a diminution, or one in which there exists an excess, in the amount of the circulating fluid. *Ubi stimulatio, ibi fluxus.* Irritation is an increment of the natural, organic actions of the part in which it occurs, accompanied with increase of the circulatory fluids, and deranging (Dr. J. says incompatible with) their functions. This increase of *fluids*, and of *vital forces*, in one part of the body, gives rise to a corresponding diminution in others: hence, irritation can never be general, but always leaves some parts of the body in a state of asthenia.

Irritation may also be confined to a tissue; and is very apt in this manner to spread through the body, the different parts of the same structure having a strong tendency to sympathize with each other. Dr. JACKSON follows BEGIN in referring irritation to three general heads, or classes: sanguine, lymphatic, and nervous. Sanguine irritation may be—1. Secretory, or evacuative, 2. Congestive, 3. Gaseous, (meaning with a tendency to secrete gas, as in intestinal and peritoneal tympanitis, in a rare case of idiopathic emphysema from cold, narrated by himself, in gaseous secretion of the uterus, &c.) 4. Hæmorrhagic, 5. Common inflammatory, 6. Hypertrophic, and 7. Atrophic. Lymphatic irritation, the *sub-inflammation* of M. BROUSSAIS, is that process which forms tubercles, cancer, melanosis, common glandular enlargements, &c. Dr. J. appears to us to have confused the lymphatics with the ordinary white capillaries; an error into which he may have beed led by M. BEGIN, who does not always clearly distinguish between them. The *lymphatics*, as we know them, are always found employed in conveying certain materials towards the heart; while those capillaries which perform the nutrition of the white and exanguious portions of the body, (cartilages, tunica conjunctiva, cornea, &c.) and in which would appear to be seated the irritative operations productive of tubercles, cancers, scrofulous tumours, &c. have an entirely different office, and, it is fair to presume, a different nature. As, however, these last seem to be principally concerned in the diseased changes incident to the lymphatic glands, and as both of them are commonly associated together in the common predominance or deficiency which characterizes certain *temperaments*, it is not uncommon with pathologists, though certainly incorrect, to confuse them.

Nervous irritation, on the other hand, is of a totally different kind; depending on the peculiar laws and modes of operation of the system in which it is situated. The nervous system is not a unit; but consists of various organs and apparatuses, each having peculiar functions assigned to it.

Dr. J. considers the cerebro-spinal medulla as the common centre of the nervous system of relation and the ganglionic system, the point to which impressions are transmitted, and from which they are reflected upon the various parts of the economy. He does not seem to attach much importance to those most abundant communications established between the different viscera by the ganglionic nerves, to which the hypothesis of the intervention of the brain is entirely unnecessary. Nervous irritation may be, and often is, confined to a single organ, and gives rise to a great diversity of symptoms according to the great differences of these local situations, on which neither Dr. J. nor ourselves have space to dilate.

The paper breaks off somewhat abruptly, promising to continue on the *laws* of irritation.

20. *Apoplexy of the Lungs.*—M. Bouillaud, adjunct member of the Royal Academy of Medicine, has published two cases of this hitherto but imperfectly known disease. Apoplexy of the lungs was first well described by Laennec; who gives, as its leading diagnostics by the stethoscope, a mucous rattle, apparently produced by large bubbles of air, traversing a fluid in the bronchiæ, and frequently bursting; and the suspension of all the sounds of respiration, as presented by the stethoscope, in a small portion of the lungs. M. Bouillaud remarks, that the rattle only proves the presence of a fluid in the air-passages, and not the nature of that fluid; and that it can furnish no evidence of the existence of apoplexy of the lungs, unless by combination with other characteristic signs; and with regard to the second diagnostic character, one of his cases distinctly exhibited the rattle produced by respiration, in a case of very considerable local extent, over the whole surface of the lungs.

From these observations, the author concludes, that the diagnosis of this disease must still be considered as very imperfect, the stethoscope not having removed the imperfection which existed in our previous means of discrimination, (hæmoptysis, oppression of respiration, coldness of the extremities, &c.)

M. Bouillaud's cases, also, differed from the observations and the two records given by M. Laennec, in the fact that the disease, in one of them, extended through a large portion of the lungs, instead of being confined, according to the experience of the latter pathologist, to a cube of from one to four inches in length; and in the circumstance, that, in the other subject, the effused blood was found enveloped in a cyst, composed of a substance analogous to inflammatory lymph.

21. *Purulent Ophthalmia of Infants.*—Dr. F. A. Ammon has published a monograph on the anatomico-pathologic condition of the globe and membranes of the eye in the ophthalmia of young infants. In this disease, there is a great congestion of blood in the internal parts of the eye, which sometimes almost amounts to inflammation. The exterior parts of the globe presented precisely the same aspect as the contagious ophthalmia,—a new proof as to the identity of these two diseases.

22. *Hæmoptysis from Worms.*—Dr. Daulioulle has contributed to the Marseilles Society the narrative of a case of hæmoptysis which twice returned after the most active treatment by the usual remedies. Nevertheless, during the third attempt to remove the disease, the patient vomited a large lumbricus; on which calomel, male fern, camphor, and injections, were administered, with the effect of evacuating a dozen more of these animals, and of producing a permanent cure.

23. *Phthisis Pulmonalis.*—M. Andral has turned his attention to the nature of pulmonary tubercles, and gives the result of some observations made in the wards of M. Lerminier, one of the physicians of La Charité. He

concludes, that tubercles of the lungs are the product of a morbid secretion; and that it consequently seems improper to designate them, as is frequently done, under the appellation of tissue, as they have none of the anatomical characters of a tissue. In this he agrees with M. Cruveilhier; who considers tubercles the result of irritation in the vesicles of the lungs. M. Andral considers the morbid process which precedes the tuberculous secretion, to be an active, sanguineous congestion, similar to that which precedes every secretory process, whether regular or irregular; but it is not necessarily a pneumonia, in the ordinary sense of that term.

This secretion may take place indifferently in several of the tissues which enter into the composition of the lungs; and the opinion, that the exclusive cause of tubercles is an inflammation of the white vessels, and that their exclusive seat is in these vessels and their ganglions, is in opposition to many well-established facts.

The *pulmonary granulations* of Bayle are not, as he supposes, tubercles in a nascent state. These minute substances are red and soft, before they become gray and hard; their granulated aspect is an effect artificially produced when the pulmonary lobules are cut or torn; and, far from being a new production, they are constituted by portions of lobules separately inflamed.

In many cases, in which patients have died during abundant hæmoptysis, M. Andral has not been able to recognize any other source of the expectorated blood than the mucous membrane; but in all the cases which he examined, with but one exception, there were also tubercles in the lungs. In that one instance, the patient seemed to have died in consequence of sanguineous exhalation from the bronchial surface. In these cases, the bronchial membrane presents no other læsions than those which are seen in cases of simple bronchitis; and sometimes it is pale, or, at most, has a slight rose-coloured tint. When the hæmorrhage has its source in the parenchyma of the lungs, those læsions are formed, which M. Laennec describes under the head of *pulmonary apoplexy*. Vide that article on the preceding page of this Quarterly Summary. Other inferences are expressed in the aphoristic form, as follows:

Many individuals have had abundant spitting of blood, and yet have not become phthisical.

In others, the first appearance of blood in the expectoration has preceded, by many years, the first appearance of phthisical symptoms.

In other cases, the first hæmoptysis has been immediately followed by all the symptoms which indicate the existence of pulmonary tubercles.

Many patients are not attacked with hæmoptysis, until after the tubercles in their lungs have acquired a considerable development, and phthisis is already far advanced.

It is not uncommon to see the tuberculous affection of the lungs go through all its periods, and death take place, without the least hæmoptysis being ever observed.

Chronic laryngitis, like acute laryngitis, may exist in an idiopathic form; but it is only in very rare cases that it can by itself give rise to the symptoms of consumption. *Laryngeal phthisis* is therefore not at all a common occurrence.

In the greater part of the cases in which the symptoms of phthisis are accompanied by an affection of the larynx, those symptoms are to be referred to tubercles developed in the lungs, whether the tubercles have preceded or followed the laryngitis.

24. *Effect of Diet in Consumption.*—It is known, that considerable diversity of opinion exists among physicians, respecting the diet proper for phthisical patients "At this moment," says an analyst in the London Re-

pository, to which we are indebted for the materials of this and the preceding articles, "there are practitioners in England, who confine their phthisical patients to vegetable and milk diet; and others, who give them animal food and wine, almost to the exclusion of vegetables." Some French pathologists now think, that vegetable food encourages the production of tubercles; and this opinion seems chiefly to be founded on the rare occurrence of tubercles in carnivorous animals, and its frequency in those which are herbivorous. M. HUZARD finds that tubercles are very common in cows; and M. SEGALAS suggests, that cows' milk may favour their development in the human body.

25. *Inflammation of the Glands of Peyer and Brunner. Dothinentery.*—Of this new species of enteritis, we gave some account, when speaking of the labours of Dr. BRETONNEAU, at p. 161, of our second volume. Dr. TROILLET, of Paris, nearly coincides with the former author in his main points. We have now an opportunity to record the same facts, as they appear to an English practitioner. Differently coloured spectacles have here been used; and the dothinentery, instead of the essential disease, producing general febrile symptoms by sympathy, as in other inflammations, has become a complication, taking place in the course of an *idiopathic* fever. Calomel is also found useful; so that the discovery stands now arrayed in a garb less foreign to American eyes.

Dr. HEWETT apprehends, that the inflammation of these mucous glands is owing to their orifices being obstructed by a dark, vitiated, and inspissated mucus; that they then swell, as the sebaceous follicles of the skin do in the acne punctata of Dr. BATEMAN. They may be seen in various stages, on dissection; at first having their inflammatory process confined to their own substance, then spreading to the adjacent glands, and by this time, or subsequently, to a small portion of the mucous membrane immediately surrounding their base, producing a slight redness and considerable thickening. The margins of the ulcers frequently appear, at least in the early stages, puckered, jagged, or fringed. The base of such ulcers often exhibits a rough, irregular surface, with little, projecting masses of enlarged or sloughing follicles; or presents a sloughy, ash-coloured appearance, resembling that of chancre; or displays a dirty, yellow hue, from the bilious-coloured, feculent matter adhering to it. The work of disorganization seems to be effected, partly by the ulcerative, partly by the sloughing process. The erosion extends gradually downwards, from the mucous to the muscular and peritoneal coats; sometimes, though rarely, perforating the latter, and then rapidly exciting extensive peritonitis, "by the escape of foreign matter into the cavity of the abdomen." This perforation of the peritoneal cavity is sometimes prevented by adhesions of the intestine to adjacent parts, through the effusion of coagulable lymph. The mesenteric glands corresponding to the seat of such ulcers, are generally found increased in size and vascularity; sometimes resembling, when cut into, the pulp of a morello, or even a red, cherry.

We are following JOHNSON's Medico-Chirurgical Review, not having received the original. From the next passage it would appear, that Dr. HEWETT had confused ulceration of the *great intestines*, from a tropical dysentery, with this particular disease of the glands of PEYER and BRUNNER. Ulcers of the former kind are frequently demonstrated in our schools.

In most of the cases of "follicular ulceration, in idiopathic fever," the seat of the ulcers will be indicated, immediately on opening the abdomen, by small, opaque patches, of silvery whiteness, or by apparently attenuated spots, occurring in discoloured portions of the intestines. In some cases, however, there is no external indication sufficient to betray their presence.

Dr. HEWETT bears testimony, as numerous French physicians have done, to the general accuracy of M. BRETONNEAU's descriptions of dothinentery—a malady, which some in this country appear to have taken for a joke; but we can assure them, that the accounts of it, transmitted from abroad, have every character of consistency and truth, notwithstanding it has received such a droll name.

Dr. HEWETT, as we have already said, recommends "effective doses" of calomel. His theory of its operation is, that it benefits the disease, by compelling the evacuation, from the mouths of the follicles, of the inspissated mucus which is causing their inflammation. Our theory, on the other hand, is, that it produces its good effects upon precisely the same principles on which calomel, when not contra-indicated by extraneous circumstances, benefits every species and variety of inflammation or plethora within the abdomen, as well as those sympathetic complaints which depend upon such. At any rate, the practice is not at all repulsive to our American notions. The reviewer in Dr. JOHNSON's Journal states, with the rather free humour so prevalent in that publication, that if Dr. BROUSSAIS were to read the passage in which calomel is thus recommended, "it would make his hair stand on end, 'like quills upon the fretful porcupine;'" and that one of the school attached to that writer, would accuse the calomel of being a principal cause of the disease it was intended to prevent.

Dr. HEWETT has published a series of cases of this affection, treated at St. George's Hospital. The practice hinged principally upon the application of leeches to the abdomen, and in the employment of aperient medicine, generally mercurial. Mercury was also usually given in the alterative manner. He divides the course of the disease into three stages, the distinctions of which, in the review, are not very clear to our apprehension. We take them to be, 1. the period of inflammation of the glands, not generally extending to the adjacent mucous membrane; 2. that of ulceration of the follicles, generally accompanied by some slight inflammation of the neighbouring exhalant surfaces; and, 3. that of sloughing, and of recovery, or of decline and death.

On treating the disease during the first period, by the "effective exhibition of calomel, combined with any other auxiliary purgative and sudorific," for the space of three or four days, the abdomen generally becomes less hard and prominent; but the purgation should not be left off till the belly feels soft and supple. This system being followed up five or six days, and the evacuations still continuing unhealthy, Dr. HEWETT advises "the *purgation* to be slackened for a day or two," and a dose of *castor oil* given, "for the purpose of ascertaining whether the unhealthy character of the evacuations may not have been prolonged by the continued irritation of the purgative." (Is castor oil no purgative? Or is calomel so par eminence; as if it were not at least equally remarkable for other peculiarities?) Castor oil, under such circumstances, will often bring away natural, though liquid motions, and produce a subsidence of the abdomen.

In the second stage, leeches are to be repeatedly applied to the abdomen; while two or three grains of calomel, and the same quantity of JAMES's powder, may be given every six hours, exhibiting, occasionally, small doses of castor oil. If the bowels are already relaxed, a quarter of a grain of opium, or three grains of extract of white poppy, may be added to the pills. The same measures may be pursued, even after follicular ulceration has been established, if the symptoms indicate local inflammation and febrile excitement.

IV. THERAPEUTICS, MATERIA MEDICA, AND THE PRACTICE OF MEDICINE.

26. *Influence of Broussais' Doctrines.*—As we have, from time to time, expressed in this Journal our decided conviction of the beneficial tendency of the medical doctrine, known under the title of *physiological*, and of which the founder is Dr. Broussais, of Paris, we deem it necessary to offer here a few remarks, (in justification of ourselves for entertaining this opinion,) on the assertions made in Europe, and repeated in this country, respecting the greater mortality in the practice of those who follow the precepts of Broussais, and particularly of this physician himself. These assertions are founded on a supposed authentic table of the mortality in the military hospital of Paris—the Val de Grace—which originally appeared in the Revue Médicale, a journal published at Paris, was afterwards copied in other periodicals of France, and, finally, adduced by M. Prus, in his Essay on Irritation and Inflammation, and by M. Miquel, in his *Lettres à un Médécin de Province*, as an unanswerable proof of the danger of treating diseases *physiologically*. We here insert the table, as we find it in the above mentioned works.

YEARS.	VAIDY.			DESGENETTES.			PIERRE.			BROUSSAIS.		
	Death.		Sick.	Death.		Sick.	Death.		Sick.	Death.		Sick.
1815	1	in	17	1	in	19	1	in	16	1	in	11
1816	1		24	1		22	1		25	1		19
1817	1		18	1		20	1		24	1		14
1818	1		15	1		16	1		20	1		12
1819	1		12	1		22	1		18	1		8

To this table M. Broussais immediately replied, denying its authenticity, and defying the author, or the editors of the Revue Médicale, to prove its correctness, or name those who had furnished the necessary documents for framing it. But as his answer was not deemed, in its turn, conclusive, and did not *prove*, by a detail of facts, the incorrectness of the table in question, the latter continued to be regarded by many as authentic, and made use of as a powerful argument by the opponents of the doctrine. Here, therefore, the thing remained, until M. Roche, a very intelligent physician of Paris, undertook the investigation of the subject. For this purpose, he was furnished by the administrators of the Val de Grace, and by Broussais, with all the documents in their possession. He appears to have laboured hard, in order to arrive at the truth; and has incorporated the results of his researches in an able and satisfactory answer to M. Miquel's jokes and lampoons on the new doctrine, published in the number of the Archives Générales for October, 1826.

In the first place, M. Roche observes, that the books containing the dates of entries and discharges, and diseases, in each ward, with the exception of those for the year 1819, were destroyed by the administrators, as soon as they were no longer of any use; consequently, it was impossible for him, except after much labour, and comparing documents with one another, to arrive at any truth on the subject. But even supposing that the mortality in M. Broussais' wards was greater, during those years, than the mortality in those of his colleagues, the circumstance is easily explained: for, whilst M. Broussais had only fever patients to prescribe for, MM. Vaidy and Pierre had, in 1819, a great number affected with the itch in their wards—one of which (No. 10) contained only prisoners, all of whom were on nearly full allowance. The same kind of patients must have filled the wards attended by M. Pierre in 1816 and 1817, as his mortality during the first was only 1 in 193, and during the latter, 1 in 167. Nor does it appear less certain, that M. Vaidy's wards, in 1816 and 1818, contained many, as his mortality during those years was 1 in 27, and 1 in 21. M. Desgenettes, although at that time physician in chief, could not have the acute diseases alone, in his wards, though the fact has been asserted, for the deaths were only 1 in 78.

M. Vaidy visited during one month only, in the year 1819, and M. Desgenettes during four; whilst, on the contrary, M. Broussais visited during two-thirds of the year.

In 1816, M. Desgenettes visited during two, in 1817 during three, and in 1818 during one month; M. Pierre only visited during four months of 1815; whereas, during the same years, M. Broussais attended during the space of eight, nine, and ten months.

It is evident, that no one can, with any justice, compare the mortality of wards filled with patients affected with fever in all its grades, with that of wards containing few diseases besides the itch. When we recollect, also, that the mortality differs much in different seasons of the year, we shall find it impossible to compare with fairness, the results of a service of one or two months, to those of another service which continued two-thirds or three-fourths of a year, and probably during the most sickly seasons.

M. Roche further remarks, that as M. Broussais' wards are destined for the clinic, the worst patients are sent thither. His mortality, then, may easily be understood to be greater, without its being inferable from that, that he is not as successful as his colleagues. The convalescents are sent off to some of the other wards, in order to make room for other cases which are more necessary for clinical demonstration. But whilst this makes the mortality in M. Broussais' wards greater, it makes that in the wards of the other physicians smaller, as these convalescents are included among their patients in the calculation of deaths, and considered as cured by them. In 1819, 119 of these patents were sent out of M. Broussais' into some other wards, and in the table of mortality in question they are not included.

But, in proof the erroneousness of this report, we may state, that it mentions that, in 1815, M. Desgenettes lost 1 patient out of 19; whilst it is proved, that he did not serve during the whole of that year.

The following is the true table of mortality in the Val de Grace, during the years 1815, 16, 17, 18, 19, as well as could be made out from the official documents in the hands of the proper authorities of the establishment: M. Desgenettes lost in 1816, 1 in 78; in 1817, 1 in 14; in 1818, 1 in 12; in 1819, 1 in 21. M. Pierre lost in 1816, 1 in 193; in 1817, 1 in 167; in 1818, 1 in 27; in 1819, 1 in 14. M. Vaidy lost in 1815, 1 in 20½; in 1816, 1 in 27; in 1817, 1 in 14; in 1818, 1 in 28; in 1819, 1 in 22. M. Broussais lost in 1815, 1 in 9½; in 1817, 1 in 16; in 1818, 1 in 14; in 1819, 1 in 10.

The want of information relative to the proportion of the mortality in the wards of M. Pierre in 1815, and of M. Broussais in 1816, arises from the loss, already alluded to, of the official documents. By comparing this official table with that already quoted, as published in the Revue Médicale, it will be found, that not one single set of figures is correct in the latter. Independently of the reasons adduced to account for the greater mortality in M. Broussais' wards, it should be borne in mind, that during two months of his service in 1819, measles of a malignant character prevailed to a great extent among the troops forming the garrison of Paris. During this short period, 72 died; whilst, during the seven other months, only 39 perished in the same wards. During the whole of this epidemic, MM. Vaidy and Desgenettes did not attend; and M. Pierre was attending the wards filled with itch, and with prisoners, and consequently could only see a limited number of bad cases.

The following is an hospital report of the mortality at the Val de Grace, from 1800 to 1820, by periods of five years; by which it is proved, that the proportion of deaths in that hospital has decreased in a very remarkable manner, since the introduction there of the physiological medicine.

From 1800 *to* 1804, *inclusive.*
Cures, 27,880—Deaths, 1,740—making 1 in 16 1-43d.
From 1805 *to* 1809, *inclusive.*
Cures, 26,249—Deaths, 2,401—making 1 in 10 15-16ths.
From 1810 *to* 1814, *inclusive.*
Cures, 38,355—Deaths, 5,976—making 1 in 9 4-5ths.
From 1815 *to* 1820, *inclusive.*
Cures, 31,803—Deaths, 1,132—making 1 in 28 1-20th.

The average duration of the treatment, also, from 1810 to 1814, was seventeen days; whereas, from that period to 1820, it has been reduced to fourteen days.

Extending next our researches to the other hospitals of France, and to one in Spain, attended by physicians following the precepts of the physiological school, we find, that at the military hospital of Rennes, under the care of Dr. RENNATI, during the course of 1825, 584 patients were treated, of which 521 were cured, and 14 died; making a proportion of about 2½ per cent. Of these also it appears, that one died before he arrived at the hospital, and another two hours after the visit of the physician. At the hospital of Pampelune, under the charge of Dr. DOMMANGEL, 772 patients were found there on the 1st January, 1825; during the course of the year, 1100 were admitted, of whom 1096 were cured, 3 died, and 773 were left at the time of writing the report. As the number found was equal to that left, we may divide the number admitted by that of the deaths, which gives 1 in 366—a very small portion, even supposing most of the diseases to have been of a very trifling nature. In the military hospital of Madrid, under Dr. FAURE, there were found, on the 1st of January, 1825, 117 patients; during the year, 1527 were admitted, making a total of 1644; of these, 1506 were cured, 48 died, and 90 were left at the hospital on the 1st of January, 1826. Deducting 27 from the number found, to make it equal the number left, and adding them to the number admitted, and dividing the whole of them, 1671, by the number of the deaths, we have left 1-34¾th part, or about 3 per cent.

In the second division of fever patients in the military hospital of Madrid, from the twenty-seventh of May to the first of July, 1823, 376 patients were admitted; of which 238 were cured, 8 died, and 130 were left. The mortality amounted, therefore, to 1 in 29 6-8ths. M. DUPONCHEL, physician in the army of Spain, remarks, that the troops arriving at Madrid, were worn out by the fatigue of long marches, and that many of the cases were of a very violent character. In the military hospital of the Island of Leon, (division of fevers,) during the months of September, October, and November, 1824, 28 patients were found, 154 entered, 151 were discharged cured, 7 died, and 24 were left; making a proportion of 1 death to 21 4-7th cases. Mr. DUPONCHEL remarks, that, as the season was that of the annual inspection, three of those who died, came in with chronic pneumonia, for which they were to be sent back to France.

In the military hospital of Rocroy, during the first quarter of 1825, 2 patients were found, 30 entered, 29 were discharged cured, 1 died, (chronic pneumonia,) and 2 were left. The mortality, therefore, was 1 in 29. In the military hospital of Longwy, from the first of May to the first of October, 1826, 23 patients were found, 67 were admitted, 83 were discharged cured, 2 died, and 5 were left. Both of those who were marked dead, were brought lifeless to the hospital. One of them was killed in a duel, and the other was drowned. The mortality, therefore, instead of being as 1 to 41½, is reduced to nothing. The returns of these four mentioned hospitals, were furnished by the attending physician, M. Duponchel, and published in the Annales de la Médécine Physiologique. M. D. adds, that in the military hospital of Santa Maria, during the month of September, 1823, (during the hottest period of the season, and whilst the soldiers were exhausted with fatigue, on account of working at the trenches before Cadiz,) upwards of 500 patients were admitted, of whom only 16 died, or about 1 in 25.

In a note furnished to Dr. Broussais by Dr. Chervin, and written by Dr. Ferran, of Xeres, in Spain, it appears that he (Dr. F.) lost, by the old method, 50 0-0ths. of his yellow fever patients, whereas, since he adopted the new method, he has only lost a little more than 5 0-0ths. In the hospitals of Paris, on the contrary, in which physicians of a different school and who would shudder at the bare idea of being suspected to follow the theoretical or practical precepts of the new school, attend, things assume a very different aspect. It is true, that the kind of patients admitted in these establishments is very different from that by which the wards of a military hospital are filled,—consisting as it does of the poorest portion of the population, the outcast of society, whose constitutions are often broken down by disease and debauchery,—whilst soldiers are generally hearty, well fed and clothed. Yet the difference in the proportion of deaths is too great,—the trial has been made under circumstances too evidently different, as, for example, a quiet garrison duty or the fatigues of a campaign, not to justify us in the suspicion, that this difference depends on something more than a different condition of the patients in the two sorts of establishments. Thus, on investigation, it will be found, that M. Recamier, one of the physicians of the Hotel Dieu, lost, during the last quarter of 1824, 18 patients out of 135, being about one in eight. In the course of the year 1825, he lost 122 patients out of 707, being rather more than one-fifth. During the first quarter of 1826, 143 patients were treated by the same physician. Of these, 20 died, making about one in seven.

During the second quarter of the same year, 205 patients were treated. Of these, 32 died; being more than one-seventh. During the third quarter of the same year, this physician lost 14 out of 144 patients, making about one-tenth of the whole. M. Recamier's reports are drawn up by Mr. Martinet, and published in the Revue Médicale.

In the Hospital de la Pitié, M. Bailly lost, during the months of March, April, and May, 1825, 103 out of 573 patients, making about 1 in 5½.

At La Charité, Laennec lost, from the first of November, 1825, to the fifteenth of April, 1826, 37 out of 188 patients,—making, according to the reporter, 1 in 8 for acute, and 1 in 4 for chronic, diseases, or 1 in 5 for the whole. From the first of April to the twentieth of August, out of 168 he lost 18 patients—a little more than 1 in 10: and during the first solar quarter of the year 1825, out of 160 patients he lost 29; being a little less than one-fifth.

Other reports might be added, but we trust that enough has been said to show, that those who practice medicine agreeably to the "Doctrine Physiologique," do not lose more patients, than such as treat this doctrine with contempt, and seem to regard all the followers of Broussais as madcaps, fitter to inhabit the cells of a lunatic asylum than to engage in the practice of our noble profession.

Mr. Castel, in his work against the new doctrine, has brought forward necrological tables of the department of the Seine, to prove that the adoption of that doctrine in the practice of medicine, had caused an increase in the mortality of Paris.

From these tables it appears, that in 1817 there were 2000 deaths more than in 1816; but this difference could not be ascribed to the new doctrine, which was then in its infancy, and only began to count many proselytes in 1818. Laying aside 1817, therefore, we find that in 1816 there were 22,421 deaths—in 1819, 22,671—in 1820, 22,464—in 1821, 22,917—and in 1822, 23,282. The difference for the lowest number to the highest, is only 818, a difference too trifling to be entitled to attention.

Now, when, with these facts before us, we bear in mind the great increase in the population of Paris, from the influx of strangers, of inhabitants from the provinces, and of a large number of workmen, (of masons in particular—the number of whom is estimated at 60,000,) we shall be ready to conclude, that, so far from having increased the mortality, the new doctrine has caused it to diminish.

27. *On the Efficacy of the Spirits of Turpentine in Sciatica.*—In the November number of the Revue Médicale, which we have just received, M. Piorry has published a case of femoro-popliteal neuralgia, in which the spirits of turpentine, exhibited internally, was found very efficacious. The disease was at first treated by means of antiphlogistics and lactucarium, but without any other benefit than a momentary respite from pain, and a little sleep. A blister was also tried, but the relief obtained from it was only of short duration. M. P. next prescribed a dram of the spirits of turpentine to be taken twice a day. The next day the pain was less severe, and on the fourth day was so far diminished as to induce the patient to imagine she was cured, and to get out of bed. Owing to this it returned; but in a few days, and by means of the same remedy, the patient was restored to perfect health. M. Piorry remarks, that in this case the turpentine produced no other gastric symptom than a loss of appetite for a few days—a sensation of heat and weight in the stomach, and only once vomiting. It did not give rise to diarrhœa.

The spirits of turpentine used in this manner, was first, we believe, introduced in the treatment of sciatica by M. Martinet, of Paris, and has since been employed very efficaciously by several of our Gallic brethren.

28. *Belladonna and Nitrate of Silver in Epilepsy.*—In one of the numbers of Ferrusac's Bulletin, (November, 1826,) we find the following remarks on epilepsy, by Dr. Tobl, of Aurich, extracted from a German journal. After stating that we most generally resort to an empirical mode of treatment in epilepsy, Dr. T. states, that although the remedies proposed for the cure of this disease are very numerous,—amounting already in the seventeenth century to more than two hundred, yet he has only found two, the efficacy of which appears to him to be fairly demonstrated,—belladonna and nitrate of silver.

"It is true, that with belladonna I have never cured a well established case of epilepsy; all I have accomplished by even its long continued use, was to render the attacks less frequent. By the nitrate of silver, on the contrary, I have radically cured true epilepsies of many years standing." "In strong and sanguineous subjects,—when the head is the seat of a sanguineous congestion, I make use of the lancet before resorting to the nitrate of silver. I am very careful, during the course of the treatment, to keep the bowels regular;—I increase very rapidly the dose of the remedy, and direct it to be continued a long time after the cure. I generally commence with one-sixth of a grain, morning and night, and increase it to one grain and a half. A strict regimen is of the highest importance, and it is particularly necessary to proscribe venereal pleasures." Dr. T. adds, that he has never noticed any change in the colour of the skin, although he sometimes continued the use of the nitrate during two years.

29. *Dr. Johnson on Nitrate of Silver.*—We have already expressed our sentiments concerning the value of this gentleman's little work on morbid sensibility of the stomach and bowels. Dr. J. says, page 125, "It is well known to surgeons that the nitrate of silver is one of the most powerful allayers of irritability, when applied externally to irritable sores. It is also well known, that this medicine may be given internally to the extent of several grains daily, for months in succession, in cases of epilepsy, and that, without ever producing any bad effects." After giving an account of a case of epilepsy, attended with "dyspepsia and great irritability of the stomach and bowels," in which the patient was restored to perfect health by the use of nitrate of silver, he remarks, "But, several cases have since occurred, which lead me to think, *first*, that epilepsy very often depends on morbid sensibility of the gastric and intestinal nerves; and *secondly*, that it is by removing this morbid irritability of the alimentary canal, that the nitrate of silver sometimes cures epilepsy."

Convulsions and epilepsy are often occasioned by worms, and, he remarks, the removal of the worms cures the convulsions and epilepsy, by removing the cause of irritation; and the nitrate of silver very probably acts, in other cases, by lessening the sensibility of the nerves, and thereby rendering them unsusceptible of irritation. On this principle I have administered the nitrate of silver, of late, in cases where the morbid sensibility of the gastric and intestinal nerves, was produced by other causes than worms, and gave rise to other phenomena than epilepsy, and hitherto with marked advantage. Dr. J. next relates the case of a lady "for years harassed with convulsive twitchings, faintings, and a host of anomalous symptoms, almost daily, which rendered her life miserable, and resisted every remedy that could be thought of by several eminent practitioners.

"Not knowing what else to do, I gave her the nitrate of silver, at first in doses of half a grain twice a day, gradually increasing it to four grains per diem, and that, continued for the space of three months." He also gave her sulphate of quinine, to the amount of two or three grains daily, and long before the expiration of the three months she was restored to health. He says further, "half a grain of nitrate of silver, and two, three, or four of extract of rhubarb, or, if the bowels require no assistance, extract of camomile, or gentian, may be given every night at bed time, and the dose gradually increased to two or three grains daily." A most careful attention should be paid at the same time to the diet of the patient, without which all medicines will fail.

30. *Cinchona in Acute Rheumatism.*—Dr. ANTHONY TODD THOMSON has published in the February number of the Medical and Physical Journal of London, some "Remarks on Acute Rheumatism; with cases," in which he advocates the propriety of resorting to the Peruvian bark in this complaint. He seems disposed to accede to the antiquated opinion of the striking resemblance between acute rheumatism and ague—a resemblance on which HULSE MORTON and others, predicated the use of bark in the treatment of the former of these complaints. The dread of a metastasis led, he believes, to the abandonment of this practice; "but experience has demonstrated that this dread is unfounded, and where the employment of this remedy has been prefaced by the exhibition of calomel, tartar emetic, and opium, with cathartics, I have had no reason whatever, in a practice of twenty-five years, to alter my opinion on its efficacy and safety." Dr. T. is no great admirer of depletion in acute rheumatism, and states that practitioners (we suppose he means in England only, as the remark cannot

apply to all—at least to American physicians) have found that bleeding in the acute form of the disease, neither lessens the buffy appearance of the blood, nor diminishes the sufferings of the patient, unless opium, or other remedies of the sort, has been employed. Dr. T. usually combines with the bark the vin. colchi, and particularly the spirits of turpentine, the latter of which, he thinks, appears to increase the efficacy of the bark.

"In some habits, idiosyncrasy renders it impossible to continue the use of turpentine longer than forty-eight hours. The urinary organs are strongly excited, and the urine is passed with great heat and pain, and occasionally tinged with blood; whilst the skin is covered with an eruption resembling eczema rubrum; but in these individuals, the advantages derived from the remedy, in combination with cinchona, counterbalances the inconveniences which it causes; although assuredly it should not be continued to be given when the eruption is fairly formed."

Several cases are given in detail; from want of room, however, we are compelled to pass them by.

31. *Iodine.*—The following communication from our friend Dr. EDWARD JENNER COXE, of this city, will be read with interest by every one engaged in the practice of medicine, as it will contribute to remove from their minds the fears that may have existed about pushing the use of iodine sufficiently far to ensure its full effects. The quantity of the medicine administered was certainly very large, and would, unless the patient had but little inirritability, or the facts we have heard respecting its deleterious qualities are exaggerated, have given rise to the most unpleasant effects.

"The iodine and its preparations, introduced into practice by Dr. COINDET of Geneva, exerted so powerful an influence upon goitre, that it was called specific for that disease. It was so generally, and, in many instances, so injudiciously used without the advice of a physician, that several deaths occurred, and in a great number of cases so frightful and distressing were the symptoms that death would have been preferable. The medicine as might be supposed fell into disrepute; "every day brought to light some new catastrophe, the effect of iodine; and in the course of a short time its name was associated with the idea of a most intractable and virulent poison. Neither patient nor physician dared venture on its employment. It seemed to be one of those benefits held up to invite the appetite, while its use was denied us."* When the dread of this medicine had subsided, physicians were very cautious in their mode of using it, and it was found to possess as great power over tumors of almost every description as it showed when used for goitre.

Although iodine has been a good deal used in this city I regret I cannot give the general result. Dr. LA ROCHE informs me that he has used it in some cases with success. Dr. JACKSON gave the tincture in large doses for some time without effect. To the present time I have not heard of a single case, where the use of iodine has been followed by any of those symptoms described by GAIRDNER and others. The following case is interesting, as it shows that there are cases where iodine may be used in large doses and continued for some time without producing any injury.

A lady of this city having laboured under ascites for eight years, was tapped for the seventh time, September 12th, 1826. After this last operation there was discovered in the abdomen a large hard and perfectly moveable tumour, which was thought by Dr. SCHOTT and myself to be an enlarged ovarium. Besides this there was a small tumour on the right side of the neck. We determined to give the hydriodate of iodine a trial, and it was used in the most cautious manner for more than two months, without any perceptible effect. The medicine was discontinued after the first of December, and on the eighth of January, the abdomen being very much distended, tapping was again performed. The water being drawn off, neither Dr. Schott nor myself could perceive any change in the size of the tumour in the abdomen; that of the neck remaining stationary. The medicine having in the first trial produced no effect, it was determined to use it again, and increase the dose until the system showed some sign of being under its influence. The 10th of January, 30 grains of hydriodate of iodine were dissolved in one ounce of water, of which the patient was ordered to take 30 drops three times a day, increasing, after the first day, five drops each dose, which was continued until the 30 grains were taken in one day. She continued to take this quantity every day for twenty-one days, making in all 630 grains, without occasioning one unpleasant symptom. The tumour in the neck was evidently smaller than it had been before commencing the iodine, but in consequence of the expense, it was not thought adviseable to continue it any longer. Since the medicine was discontinued, the tumor in the neck has evidently decreased in size, and is now, the twelfth of March, not the fourth part as large as it was on the 12th September, 1826. The abdomen is considerably distended, and we contemplate tapping the patient in a week or ten days, when, if we perceive the slightest decrease in the size of the tumor in the abdomen, the iodine will have another trial, and the effect, if any, shall be handed in before your next number."

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* GAIRDNER on Iodine. p. 5.

32. *Anasarca cured by means of the Dry Regimen.*—In the "Recueil de la Société Royale de Médécine de Marseille," (first year, No. 1. January 1827,) which we have received a few days ago from the learned editor M. Roux, is contained the account of a case of anasarca, said to have been cured by what the author, M. D'Astros, physician of the Hotel Dieu of Aix, called the dry regimen (diéte seche). The patient was a child, six years of age, who from an imprudent exposure to cold became anasarcous. The swelling was very considerable, extending over the whole body, and resisted the use of an emetic, a purge, and of various diuretics. Perceiving that these means were of no avail, and that the swelling increased, Mr. D'Astros appears to have had recourse to his books, and struck with the fact that Asclepiade, Heraclides of Tarentum, and Celsus, occasionally submitted their patients to a complete abstinence from food; and particularly with a remark of the latter, that the duty of a good physician is, to beware filling the patient with a superfluous nourishment likely to increase the matter giving rise to the disease; but at the same time not to allow him to die of inanition, he resolved not to allow his patient any drink, under the impression it would add to the quantity of serum already accumulated; but at the same time not to carry this practice so far as to cause the child to die from thirst.

Following this indication he suppressed every tisane; placed his patient on dry food, and only allowed him about a gill of water and white wine at dinner, with a view of aiding digestion, leaving to nature the care of relieving, by means of the serum collected in the cellular membrane, the thirst by which the little patient was tormented. Not content, however, with this negative treatment, he ordered a blister to the arm, in order to afford an issue to serum accumulated in the upper part of the body, and to excite the cellular tissue. He likewise directed the feet, legs and thighs to be covered with warm cabbage leaves, for the purpose of augmenting in them the insensible perspiration; and prescribed internally the Dover's powders. These different means were continued for about a week,—and produced during the whole of that time a copious sweat, by which the child was completely relieved of the swelling. Drinks were now very cautiously allowed, and in a short time the patient was restored to perfect health.

We have offered the foregoing case to the attention of our readers, not on account of the sound pathological views it contains, nor of the novelty of the practice, (for to prevent patients affected with dropsy from drinking, was formerly a common mode of treating these complaints); but in order to show with what ease, cases of anasarca, arising from exposure to cold, and unattended with derangement of internal viscera, (which M. D'A. tells us was the fact in his patient,) may be cured by those means calculated to produce diaphoresis. The ideas of some old writers, (whom M. D'A. might have quoted with more propriety than he did CELSUS,) of prohibiting the use of drink from the fear that they would increase the quantity of serum, is an error which more modern experience has completely exploded; and we have no doubt that if our author had resorted to the above mentioned means, and allowed his patient at the same time, enough water to quench his thirst, he would have succeeded as well. He would also, by so doing, have saved himself the necessity of indulging in a reasoning which, it appears to us, would have better suited the fifteenth than the present century.

33. *Digitalis in Epilepsy.*—The Edinburgh Medical and Surgical Journal for January, 1827, contains a short essay "On the employment of Digitalis in Epilepsy," by Mr. ROGER WAKEFIELD SCOTT, of Liverpool. Mr. S. appears to have prescribed this remedy with success in the above mentioned disease, if not as a cure, at least as a palliative, and adduces a case communicated to him by his friend Dr. BRIGGS, "which strongly exemplifies the utility of digitalis, even in a small quantity, in a peculiar affection of the sensorium, accompanied with other marks of general irritability." In Mr. SCOTT's case of epilepsy, the patient, nine years of age, had been affected with chronic hydrocephalus;—the faculties were much impaired, and the convulsions at one period came on as often as twenty times every day. They had been suspended by means of medicines on two occasions for the space of several months; but returned, and during the four years previous to this application of the patient to Mr. SCOTT, he had never passed a day without them. He had usually six or seven, sometimes ten or twelve. They were generally preceded by twitchings, but sometimes came on without any indication. They were excited by the slightest causes, such as fear, anger, fatigue, crying, and even a current of fresh air blowing upon his face. When the case came under his care, Mr. S. prescribed nitrate of silver, and continued it for some time;—ammoniated copper, arsenical liquor, sulphate of quinine, mercury and daily purgatives. He also frequently resorted to leeches and blisters, and established an issue. But from the latter means no relief was obtained.

"I then prescribed the tincture of digitalis, in the dose of six minims, three times a day. In a short time the frequency and duration of the paroxyms were diminished; and by gradually increasing the quantity to twelve drops, they altogether ceased; and he continued free from them for four months; though the twitchings did not entirely cease." The patient was now sent into the country, where his general health improved; but the fits returned. Since that time he continued occasionally subject to them; but in a milder form and not so frequent as formerly,—not oftener, on the average, than once in ten days. "As his mother had observed that violent twitchings generally came on immediately before the accession of a paroxysm, or were much aggravated if they already existed, she was induced to administer the tincture at those times, as being more likely to prevent the attack, and she accordingly found that it was attended with that effect. Instead of giving him any definite daily quantity, she now regulates the the dose, and time of its exhibition, according to the frequency and urgency of the twitchings; if the dose be sufficient, it scarcely ever fails to prevent the fit; and she attributes those to which he is occasionally subject, to her not venturing to give it in a quantity sufficiently large to prevent them, which she feels persuaded it would otherwise do. Sometimes, when the twitchings have been unusually severe, she has given him half a dessert-spoonful in a few minutes before they have ceased, and that upon some occasions twice in the same day; but it is seldom requisite to exhibit it so largely." "If the twitchings are violent towards night, she observes, that he has frequently an attack during sleep, or immediately upon awakening in the morning, and this she has found to be prevented by giving him a tea-spoonful at bed time. Those violent twitchings, also, which generally precede an attack, sometimes come on in the morning, when she likewise administers it with the same effect."

To this case Mr. Scott has appended some interesting remarks, which we are sorry our limits will not permit us to transcribe here. We must mention, however, that he is not of opinion that the digitalis will effect a permanent cure in this case, as it is probable that some organic change has taken place—in which we concur with him.

34. *Sulphate of Quinine administered by Friction.*—At a meeting of the Royal Academy of Medicine of Paris, held on the 22d of August last, MM. Bagneris, Itard, and Miquel, read a report on a memoir by M. Pointe, physician of the Hotel Dieu of Lyons, entitled "*Observations sur des Gastro-enterites, avec Fievre remittente et intermittente guéries par le Sulphate de Quinine administré en Friction.*" From this report, an account of which is contained in the Archives Générales for Sept. 1826, it appears, that M. Pointe, having remarked that the sulphate of quinine very often irritates the stomach, when administered internally, resolved to use it by friction on the gums and internal surface of the lips, as Clare had already done with mercury. He details, in his memoir, nine cases of intermittent and remittent fevers, which were cured by this method. The dose of the remedy was from four to eight grains, morning and evening. The only inconvenience which M. P. could discover, was the extreme bitterness of the sulphate, which could perhaps be obviated by combining with it some other substance. In two cases, the salt was applied on a blistered surface, and produced the desired effect. This proves, that in the other cases the remedy was absorbed; and that the opinion of some of the members of the academy, who took part in the discussion elicited by the report, and who thought that a portion of the sulphate had been swallowed, and that to this the benefit was to be ascribed, is destitute of foundation.

35. *Extract of the Indigenous Poppy, or European Opium.*—At a meeting of the Royal Academy of Medicine of Paris, held on the 10th of October last, M. Drousart read some observations, in continuation of those already read by him at a former meeting. His object is to discover the reason why the extract of indigenous poppy, although as calming as the oriental opium, very seldom produces narcotism. With a view of arriving at this knowledge, he endeavours to find out which, among the constitutent parts of opium, produce calming, and which give rise to exciting effects. It appears certain, that opium, when completely deprived of morphia, of narcotin, and of the acrid principle, is inert. The question then is, to determine accurately the action of these three elements. Agreeably to MM. Magendie and Robiquet, the calming action of opium is due to the morphia, and its exciting action to the narcotin. MM. Delens and Vassal entertain the same opinion

with regard to morphia; whilst, on the contrary, M. Guersent attributes to this substance exciting qualities, and M. Lertuerner and a French pharmaceutist have proved them by direct experiments performed on themselves. This opinion is also that adopted by M. Bally, after numerous trials made by him at the hospital of La Pitié; finally, M. Barbier remarks, that the action of morphia is similar to that of opium, and that, like that of the latter, it is sometimes calming, sometimes exciting. It results from these researches on morphia, remarks M. Drousart, that this substance does not possess the specific property of calming the brain, and that it only effects this in some cases by determining a congestion in that organ. The difference of opinions respecting the properties of pure narcotin, is still greater. MM. Magendie and Barbier say, they have seen this substance produce, in doses of half a grain, exciting effects of great intensity; whereas M. Bally asserts, that he has administered from thirty to sixty grains of it with impunity. It appears to be held in solution in opium by an oily matter: and MM. Orfila and Bally, having administered narcotin dissolved in oil to dogs, in order to approximate it to the state in which it is discovered in opium, imagined they saw that it then exerted a calming action; the pupils, which under the influence of morphia are contracted, under that of narcotin were dilated. From these facts, M. Drousart concludes, not absolutely, but very probably, that narcotin is the principle which possesses the calming virtue; and discovers in this fact the means of explaining the more calming and less narcotic action of the extract of indigenous poppy; as, on the chemical analysis of the latter, it is found to contain much less morphine, and more narcotin, than the oriental opium of commerce.—*Archives Générales, Nov.* 1826.

V. SURGERY.

36. *Barton's New Operation for Anchylosis.*—Additional note in the case of John Coyle, in whom a new joint has been formed at the hip. See page 289, of this number.

March 22d, 1827. My patient continues to improve. A day or two since, he convinced me of his increasing strength, by walking, *without even the aid of a cane*, a distance of about fifteen yards; and repeated it on another occasion. The hip bears not the least appearance of disease, and is of a healthy temperature. Nothing is observable, but a sound and well-formed cicatrix.

It is just four months since the operation was performed, and the lapse of time has not caused any restriction to the movements of the joint. The degree of motion, though more limited than that of a natural articulation at the hip, is, nevertheless, with slight aid of the spinal column, adequate to the various offices, and to the extent already described.

The permanency of the joint may, I think, be fairly calculated on, when it is considered how difficult, frequently, and sometimes impossible, it is to effect the cure of false joints, by resorting to the most powerful means of inflaming such parts. There is, at present, a patient just admitted into the Pennsylvania Hospital, and under treatment for the cure of a false joint in the middle of the tibia, which has resisted the irritation of exercise and pressure in walking, for seven years. The person has been in the full enjoyment of health.

J. RHEA BARTON.

37. *Fracture of the Pubis.*—On the 10th of August, M. Larrey presented to the section of surgery, a soldier who had completely recovered from a fracture of the right horizontal branch of the pubis, and probably also of the ascending branch of the ischium of the same side. The rever-

sion of the ilium outwards, and the elongation of the limb, gave the appearance of a luxation of the femur downwards and inwards. The accident was caused by the pelvis being pressed between two wagons.—*Archives Générales, Sept.*

38. *Varicose Aneurism.*—M. Larrey, on the 1st of August last, presented to the Academy of Medicine, a soldier, presenting still some traces of an original varicose aneurism of the external iliac artery and vein, resulting from the puncture of a small sword, which entered obliquely at the linea alba, where the cicatrix was yet observable, and wounded the vessels a few lines before their passage under the crural arch. This soldier was cured by the almost continual application of ice upon the aneurismal tumour: the disease, at first, filled the whole iliac region, and formed externally an oval swelling, projecting about seven or eight *centimètres*, and parallel to the iliac vein. *Nine moxas*, which were successively applied around the swelling, and a cooling regimen, contributed to the recovery. The treatment lasted eighteen months, and the soldier now walks without lameness, and has returned to the service.—*Ibid.*

39. *Fish-bone, the Nucleus of a Calculus.*—Extract of a letter from Dr. H. W. Bassett, a surgeon of the navy, to a friend in Philadelphia, dated Barrancas, July 14, 1826.

"Sailing Master W. of the navy, complained, on the morning of the 10th instant, of a sharp, pricking pain in the hypogastric region, accompanied with some degree of fever. The next day, the pain increased, extending along the course of the urethra, connected with some difficulty in voiding urine. These symptoms continued until this afternoon, when a *fish-bone* was ejected, with some degree of force, from the urethra. It was coated, to the full size of the urethra, with blood and pus. The bone was nearly an inch in length. As no pain was felt in the vicinity of the kidneys, it is probable that it passed through the coats of the rectum and bladder."

40. *Suppression of a Gonorrhœa, followed by Trismus.*—Dr. Fenoglio, of Turin, relates that a young man, of a robust habit, arrested a gonorrhœa by twice immersing the penis in ice-water. Three days afterwards he was affected with a stiffness of the muscles of the neck and jaw—difficult deglutition, &c. These increased, and were accompanied with wandering pains—general fever—beating of the carotids, &c.

Dr. F. succeeded in re-establishing the urethral discharge, by means of warm baths, cataplasms, and irritating bougies, and thus effected the cure of the tetanic complaint, after it had lasted three days and three nights.—*Jour. Univer. for October.*

41. *Non-Mercurial Treatment of Syphilis.*—In our last number, at p. 197, we alluded to a paper on this subject, by Dr. Becker, (not Bucher, as there misprinted,) of Berlin,—the concluding portion of which we have since noticed in the London Medical Repository, for December, and in the Revue Médicale, for October.

The historical review appears to prove, that the treatment of syphilis without mercury was long ago in general use;—that the diagnostic appearances, to which the application of mercury has been lately restricted, are by no means well marked,—and finally, that there is still great obscurity on this important subject.

In the second part of his essay, Dr. Becker endeavours to answer the following questions:

1st. Is it possible to heal the primary syphilitic sores without mercury? what are the necessary conditions of such cures? and in what degree, as to quickness and security, are they preferable, or otherwise, to recoveries effected by mercury?

2d. Can we, by the proper management of mercury, certainly prevent the appearance of secondary symptoms?

3d. Is the occurrence of secondary symptoms constant, at least more frequent, in cases treated without mercury?

4th. How do the secondary symptoms, ensuing after the two methods of treatment, differ as to form or severity?

5th. Supposing that the secondary symptoms are curable in each case, without mercury, are they healed as securely and as quickly when this remedy is not, as when it is employed?

As to the *first* question, Dr. B. observes, that at the present day, it cannot be doubted, that syphilis can be successfully cured without mercury. The rapidity and security of the cure are in direct proportion to the rest, cleanliness, and diet, which have been observed. Rest in a horizontal position, if immediately resorted to on the first appearance of the ulcers, will almost always prevent the occurrence of buboes. These, when they do appear, do not demand mercury, as proved by the observations of KERN of Vienna—HILL of Edinburgh—THOMSON, &c. &c.

The *second* question cannot be satisfactorily answered; the author inclines to the negative.

As to the *third* question, he observes, that Sir JAMES MACGREGOR states the occurrence of secondary symptoms, when mercury was employed, as 1 to 55½. This favourable result is explained, (at least partially,) by the fact, that these English surgeons were generally partisans of the mercurial plan, and hence referred all the doubtful appearances to some other cause. MACGREGOR cites one regiment, in which, among 68 cases of genuine syphilis, treated without mercury, not one exhibited secondary symptoms. This same author gives the proportion of secondary symptoms 1 to 20⅓; HILL 1 in 13; THOMSON 1 to 12—15; and HENNEN 1 to 8¾. Some causes are assigned, why this statement should not appear unfavourable to the simple treatment of syphilis.

The *fourth* question is answered by Dr. B. in favour of the anti-mercurial plan. Sir JAMES MACGREGOR, from a comparison of 147 cases, infers that the secondary symptoms which succeed the employment of mercury, are far more difficult of treatment, than when that mineral had not been used. The experience of HILL, HENNEN, and THOMSON, confirms this statement.

The last question M. BAKER answers affirmatively, at the same time, he distinguishes between those cases where mercury was employed for the primary sores, and those where a simple antiphlogistic treatment was followed. The secondary symptoms, consequent to the last plan, are far more manageable than those consequent to the former, and even syphilitic iritis is successfully treated by local and general bleeding without mercury, in the practice of Dr. THOMSON. The secondary symptoms after mercury, though for the most part curable in the same manner, are yet frequently very difficult to manage, as they certainly are more severe.

42. *Amputation of the Neck of the Uterus.*—M. LISFRANC communicated to the section of surgery, a new case of successful amputation of the neck of the uterus: the woman became pregnant *fifteen* days after the operation; the wound healed at the end of two months. The pregnancy has no peculiarity, and has now extended to the middle of the ninth month.—*Arch. General. for December.*

43. *Excision of the Head of the Humerus.*—In the Edinburgh Journal for July, Mr. SYME relates a case in which he performed this operation on a female, for a diseased shoulder-joint of seven years standing. A perpendicular incision was made from the acromion to near the insertion of the deltoid. A finger being introduced, the disease was found to be almost entirely confined to the head of the humerus; he therefore formed, by a

semilunar cut, a flap from the scapular portion of the deltoid,—exposed the joint,—insulated the head of the bone,—protruded it,—and sawed it off, without any injury to the soft parts. A portion of the acromion, being found rough, was removed by the cutting forceps,—the glenoid cavity was deprived of its cartilage, but was otherwise sound. A smart hæmorrhage, from the posterior circumflex artery, was arrested by a ligature. Fever, treated by antiphlogistics, and followed by sinking, with erysipelas, requiring stimulants, succeeded the operation; but the cure went on regularly to a favourable termination. "The limb is shortened about an inch, and *the shoulder-joint is susceptible of distinct motion in all directions, by means of its own muscles*, while all the other joints of the limb are as serviceable as they ever were."

Our readers will immediately perceive, how much this fortunate, and, as far as Mr. Syme was concerned, this *accidental* cure by the formation of a *flexible* joint, in place of the original one, is corroborative of the very ingenious, scientific, and thus far, successful operation of Dr. Barton, for anchylosis, which we have the satisfaction of publishing in the present number of this Journal:—an operation, which, among judicious and well informed surgeons, promises to extend the usefulness of the chirurgical art, and demonstrates the great importance of establishing principles in surgery; for science, not accident, suggested to Dr. Barton its propriety and feasibility.

In the Edinburgh Medical and Surgical Journal, for January, we find that Mr. Syme has again performed this operation of excision of the head of the humerus, for disease of the shoulder-joint. He operated on the 11th of July,—in a week, his patient was able to walk about,—in six weeks, the wound had healed, excepting a portion involving an old sinus, which continued open on the 1st of November, but which probably has healed up.

44. *Extravasation of Blood on the Spinal Marrow.*—Mr. Muller, in the Medical and Chirurgical Review, for January, mentions the case of a man who, while assisting in putting hay into a loft, fell backward across a cylindrical block of wood. On being raised, he was found pale, but sensible,—the lower half of the body was *dead*,—feeling was extinct in all parts of the body, (?)—there was no external wound. In the night, the patient was agitated and delirious: next morning, he talked rationally, and he had a more animated countenance; but the pulse was feeble, and he felt convinced he was dying. He died a few hours afterwards.

On examining the back, blood was found extravasated between the muscles and the vertebræ, as also into the theca vertebralis, from the sixth cervical to the ninth dorsal vertebra. The brain, and all the other viscera of the body, were sound.

45. *Partial Removal of the Humerus.*—(Gerson and Julius' Magazine, July and August, 1825.) "A young man dislocated his humerus and fractured it close to its head. He did not apply for several days after the accident. At the end of some weeks, the fracture was not reunited; and the lower (proximal or distal?) end of the bone stood so much out, that its sharp end constantly irritated the soft parts, and the patient could not move his arm, as the slightest motion caused intolerable pain. To remedy this, the point of the lower fragment was separated from all the surrounding soft parts, and a considerable portion sawed off, *in order to form an artificial joint.* The operation succeeded perfectly. After the healing of the wound, the use of the arm was restored, with little difference from the sound arm."—*Edin. Med. and Surg. Jour. January.*

46. *Bronchocele—in which the superior Thyroid Arteries were tied.*—Mr. Earle, in the September number of the London Medical and Physical Journal, relates a case of enlarged thyroid gland, causing so much difficulty

of respiration as to threaten suffocation—and where the patient, a female, was apparently suffering under a pectoral disease with amenorrhœa for five months; incapability of swallowing solid food, &c. for which he secured the thyroid arteries—these vessels being greatly enlarged and beating with much force.

On the first of August, 1823, Mr. E. put a ligature on the right superior thyroid artery, which was nearly equal in calibre to the carotid. The most acute pain in the head immediately followed the tying of the ligature, and was succeeded by drowsiness amounting to coma. Aug. 6. Patient better—tumour diminished. Aug. 23. Tumour diminished 3½ inches in circumference, principally on the right side. Sept. 17. The left superior thyroid artery was secured,—no bad effects. On the first of October,—ligature came away,—menses reappeared after an interval of seven months. On the tenth, patient left the hospital—no cough—no impediment in swallowing,—no difficulty in respiration. The tumour was smaller, softer—and more divided in its texture. In January, 1824, the tumour was slowly decreasing, and her health was greatly restored.

47. *Urethro-cystic Speculum.*—"At a sitting of the Royal Academy on the 11th of December—M. Segalas read a note on the means of illuminating the urethra and bladder, so as to examine the interior of these organs. It consists of two bougies, two mirrors and cylindrical tubes. It forms a kind of spectacles (de lunette) to which he has given the name *Speculum urétro-cystique.* This physician, in order to afford an idea of the illumination thrown into the bladder by his apparatus, declares, that with its assistance he is able to read, in the darkest place and at the distance of fifteen inches, the finest printed characters; of this fact, M. Segalas gave actual demonstration to several of the academicians, in an experiment, made in the library of the institute."—*Archives Générales, Dec.* 1826.

48. *Ligatures to Arteries.*—In the Edinburgh Medical Transactions (vol. 2d.)—Mr. Fielding has proposed, after some experience, to employ *silk-worm-gut*, for ligatures to arteries. "It is much used by fishermen at the end of their lines—is apparently an animal substance—will sustain a weight of several pounds without breaking, and may be softened by being steeped for half an hour in warm water, so as to be easily formed into a knot." This substance retains its tenacity long enough for union of the coats of the vessels to take place. "In no case have we seen any appearance of the knots, though carefully looked for at every dressing; and in no case, has any abscess or other inconvenience followed its use"—accidents which have so frequently followed the practice of Mr. Lawrance, of employing fine dentist silk for ligatures and cutting off both ends.—*Med. Chirur. Rev. January.*

In the last number (January) of the Medical Recorder, Dr. Jameson, of Baltimore, has borne a very decided testimony to the advantages and safety of the *animal ligature*, originally suggested by Dr. Physick; which substance, being soluble, seldom, if ever, gives rise to any inconvenience. "We have used," says Dr. J. "the animal ligature for six or seven years, in many amputations of the limbs, and of the mammæ. We have once tried the carotid, once the external iliac, twice the femoral, four times the radial, once the posterior tibial, seven times the spermatic; and in no instance have we ever had secondary hæmorrhage; never have we had a ligature to slip. We have never seen any of our ligatures after their application; and often, indeed generally, our wounds have healed by the first intention." Dr. J. prefers "the ligature of soft buck-skin, of moderate thickness, cut from the skin about twice as wide as thick, and drawn between the nails of the thumb and fore-finger, so as to make it more solid."

He objects most strenuously to the modern practice of tying the ligature, so as to divide the internal and middle coats, and thus coincides with **Scarpa** and **Crampton**, in the use of *flat* ligatures, that this rupture may not ensue—a practice this, which is decidedly opposed by a majority of the best modern surgeons.

Dr. J. has also made experiments on sheep, &c. as to the effect of *transfixing an artery* with a buck-skin ligature, by means of a common suture needle. The artery in these cases becomes thickened, and its cavity obliterated; hence he suggests, that the practice of surgery, in cases of aneurism, may be improved "by passing a section of buck-skin through the affected artery, instead of tying it; that in this way, we may most safely obliterate a varicose vein; and, further, that we should not hesitate to try the same method in aneurismal varix." These suggestions, let it be remembered, have not been tested on the human subject; and we would recommend much caution on this point, as the human system is so much more irritable than that of inferior animals, that an irritation, which will excite an adhesive inflammation in the one, will often produce, in the other, a phagedenic or gangrenous inflammation.

49. *Staphylo-raphe, or Palate Suture.*—In the *February* number of the London Medical and Physical Journal, Mr. **Herbert Mayo** describes a congenital fissure of the soft palate, in a man, aged twenty-six years, very similar to that of Professor **Stevens**, published in the present number of this Journal. In Mr. **Mayo**'s patient, the voice was unpleasant and guttural; he could, however, articulate every letter intelligibly, except the letter *t*. His drink was always partially discharged through the nostrils; and even part of his solid food made its way through the fissure to the upper surface of the palate, until he managed to dislodge it.

The operation was performed on the 8th of December, 1826, in the usual way. Four ligatures were passed, apparently without difficulty, by means of a small curved needle, fixed in a strong porte-aiguille, and drawn through by the forceps.

In the evening, the patient swallowed a small quantity of liquid food, without the return of any part by the nostrils; (the entire abstinence recommended by Dr. **Stevens**, would seem preferable to this indulgence.) On the 10th, the two uppermost ligatures were removed, and the remainder on the 11th; the union appearing firm. Subsequently, the lower third part gave way; the remaining two-thirds formed a permanent adhesion. On the 31st of December, the operation was repeated on the lower portion, which was not fully successful, a small opening remaining at the upper angle of the incision; this, however, contracted; and by the 14th of January, 1827, was diminished to a line in diameter. At this date, the patient could swallow perfectly, and was able to articulate distinctly the letter *t*, in his own name, Tucker, which he had previously pronounced "Ucker;" the guttural tone remains unchanged.

50. *Injuries from Dissection.*—In our last number, we detailed some valuable cases of the bad consequences of wounds received in dissection, from Mr. **Travers**' work on Constitutional Irritation. In the February number of the London Medical and Physical Journal, there is an account of another case of this kind, occurring in a physician, and reported by his surgeon, Mr. **Shaw**. We regret we cannot give the details; we have only room to give the following extract from Mr. **Shaw**'s observations: "From the history of this case, I think we are justified in concluding, that the symptoms resembled those following the bite of a venomous animal, more than those consequent on thecal inflammation, and that they proceeded from a cause independent of mere thecal inflammation;—that immediately on the commencement of such symptoms, stimuli are not injurious; that it is not necessary to bleed in such cases;—that the combination of calomel, opium, and stimuli,

even of the most powerful kind, seem to be useful;—that the lotion of acetate of lead and opium is a powerful auxiliary to the general method of treatment." In a note, he observes, "it must not be forgotten, that in almost all the cases which have terminated fatally, the patients have been bled either by the lancet or by leeches."

While recommending to the serious attention of the profession, these views and practice of Mr. Shaw, we would beg to be understood as restricting this treatment entirely to those cases, in which the nervous symptoms are the prominent indications of danger, where there is no vascular excitement, with great prostration of the organic functions. Vide Review of Travers on Constitutional Irritation, page 92, of this volume, for cases of this character.

51. *Ligature on the Subclavian Artery.*—Charles Lechevalier, 37 years of age, had been wounded in the shoulder of the left side, while a soldier in Spain, in 1811. The wound was made with a pointed instrument, and healed in three weeks: two months afterwards, however, a small tumour formed in the axilla, attended with pulsation, and during two years captivity acquired the size of an egg, and the pulsations were very strong. During a toilsome march of 900 miles, the tumour increased, so as to equal the head of a child twelve months old. He entered the Hotel Dieu, under the care of Baron Dupuytren, and the subsequent history is reported in the Repertoire, No. 2, by M. Marx.

Dupuytren determined to secure that portion of the subclavian artery which is situated *between* the scaleni muscles, because the artery is here separated from the vein and from the plexus of nerves, and the anterior pillar of the scaleni is a sure guide to the artery. "The patient being prepared for the operation, an incision was made in a slanting direction, an inch above the clavicle, through the integuments, by which some vessels were divided that required tying. The incision was then continued, the scalenus sought and found, and *this muscle divided close to its insertion by a bistoury.*" The ligature was readily passed by means of an eyed-probe of silver, and tied without pain. No inconvenience was experienced. On the 11th day, the ligature came away without any discharge of blood; the tumour was much diminished: by the 17th day, it was reduced to one-third, and offered no pulsation: by the 30th day, the wound was cicatrized, the patient began to use his arm, the tumour daily decreasing; but manifesting signs of suppuration, cold astringent applications were successfully employed. By the 78th day, it was reduced to one-fifth of its former size, and was still decreasing. The heat, sensibility, and mobility of the member, were now nearly the same as in the other arm. No pulsation at the wrist, although the vessels appeared to be full of blood. This man returned to his usual avocations; but three years after, in July, 1822, was re-admitted into the hospital, for an inflammatory tumour in the same axilla; this suppurated, and the patient has since remained well.—*Med. Chirurg. Rev. for Jan.*

52. *Ligature of the Carotid Artery.*—On the 9th of October, 1803, Mark Jackson, a servant on board his majesty's ship Tonnant, inflicted on himself a deep wound across the throat; it was four inches in length, dividing the larynx between the cricoid and thyroid cartilages, the two superior thyroid arteries, the internal jugular vein, and grazing the outer and muscular coats of the carotid artery. All these vessels, except the last, were secured by Mr. Fleming, surgeon of the ship; and the patient gradually recovered from the effects of the hæmorrhage. On the 15th of October, the ligatures came away; but the patient was much troubled by a cough, increasing in violence, from the admission of fluids into the trachea; hence, on the evening of the 17th of October, during a violent paroxysm of coughing, "the carotid artery burst, and my patient was in an instant deluged

with blood. The spectacle was rendered still more horrid, by the danger of suffocation, and the torrents of blood that issued from the mouth and nose." From the ulcerated state of the artery, every attempt to secure it failed; and syncope alone rescued the man, for a time, from actual death. In this situation, Mr. FLEMING resolved to cut lower down, and secure the carotid artery in a sound place, although he had never heard of this operation having been performed. This was readily effected, and the further flow of blood prevented. For some time, the patient appeared deprived of life; but, by the aid of stimulants, and nutrient clysters, he gradually revived, so that, by the 20th, his pulse was 90, with some increase of energy. On this day, he had an evacuation per anum, the first time for eleven days. He rapidly recovered, and was discharged from the sick list on the 20th of December, 1803.

"This," says Dr. JOHNSON, "was the first instance, in which the carotid artery was taken up, after a wound or rupture of the artery itself, and life preserved." ABERNETHY's case (which was unsuccessful) was reported in 1804.—*Med. Chirurg. Rev. for Jan.*

53. *Amputation of the Lower Jaw.*—M. DUPUYTREN presented to the Royal Institute of France, on the 7th of August, a man, named Lezier, and two females, from whom he had removed a great part of the lower jaw. To this operation he was led by observing, that, very often, individuals survived, after having lost a large portion of this bone by a gun-shot wound; and hence, there could be no reason why the operation of removal should not be performed to save life, or to remove tumours, which, adhering to the jaw, filled the whole mouth, and dilating the surrounding parts, gave to the individuals a most hideous aspect. Hence, in one of these individuals, he divided the chin, and amputated the jaw on each side of the molar teeth; he re-united the two lips of the wound; the bones approached each other; and in twenty-five days, the patient resumed his occupations. The portrait of Lezier, as he was before the operation, is preserved at the Museum of the School of Medicine at Paris. M. DUPUYTREN observed, that of *seventeen individuals who had been since operated on*, fifteen survived the operation.—*Rev. Med. for Sept.*

In the Bulletin Universel for October, an account more detailed is given of DUPUYTREN's report to the Institute. His first operation on Lezier was performed in 1812. He cited at least twenty-five cases, operated on by himself, by M. LALLEMONT of Montpellier, GRÆFE of Berlin, &c. In some of these, the lower lip was preserved; in others, it was removed, according to its condition, whether healthy or diseased. In a few, the whole alveolar processes were removed, and yet the patients survived. Three only have died in consequence of the operation; five or six, after some years, suffered relapses, which proved fatal; and eighteen have been radically cured.

"The immediate effects of amputation of the lower jaw, are much less severe, and last a much shorter time, than is usually imagined; a few days suffice for the cicatrization of the skin; and as to the bone, the re-union of the divided parts never occupied more than thirty days."

54. *Collection of Milk in the Substance of the Mamma.*—In the Archives Générale, for September, a rare case is detailed in the Opuscoli di Chirurgia of SCARPA, in which a female, aged 20 years, observed a swelling in the left axillary region—ten days after her second confinement. This was not preceded or accompanied by any inflammatory symptoms:—it continued to increase in size, while the flow of milk from the left breast gradually declined, and disappeared, so that in less than two months, it measured thirty-four inches in circumference, and when the female was seated, the breast was supported on the left thigh. The skin was shining,—and the cutaneous veins enlarged—but otherwise was unaltered.

Scarpa punctured this tumour, and drew off by means of a canula, *ten pounds of milk*, which did not differ, in its physical or chemical qualities, from milk recently secreted. The cavity of the tumour was kept open, and was eventually obliterated by means of a seton.

After a subsequent confinement, the patient suckled her child from both breasts, without the tumour being renewed.

55. *High operation for Lithotomy.*—Dr. **Ballingall** details, in the Transactions of the Edinburgh Medico-Chirurgical Society, the particulars of an operation for the stone—performed above the pubis—on a boy six years of age—who had suffered from infancy, a difficulty in making his water, and had an unconscious discharge of it in bed. The urine was drawn off by means of a catheter; and an *unsuccessful* attempt made to inject the bladder with tepid water, in consequence of the struggles of the patient, and the contraction of the abdominal muscles. The usual cautious incisions were made through the skin, &c.—and the bladder was opened by a sharp pointed bistoury,—the operator feeling the extremity of a catheter, introduced per urethram. The stone was found *impacted* in the upper part, or fundus, of the bladder,—and was extracted with great difficulty, after several fragments had been broken off by the forceps, and after enlarging the wound in a lateral direction, at right angles to the first incision, so as to avoid the now exposed peritoneum. The stone was of an irregular plum shape, weighing, exclusive of many large fragments, thirteen drams and one scruple; measuring in its longitudinal diameter upwards of two inches, and in its transverse diameter one inch and a half. It consisted principally of mixed phophate of lime and ammoniaco-magnesian phosphate. The patient survived the operation about thirty-six hours. *Dissection* revealed some marks of inflammation and some bloody serum in the peritoneum. The upper part of the bladder, embracing the stone, was enveloped with strong muscular fibres, converging towards a point on the anterior surface of this viscus: at this point, the coats appeared thickened, and the internal surface of the bladder was highly vascular, and of a soft flocculent appearance. Below the place where the stone was lodged, there was some disposition to organic contraction. The *reasons* which induced Dr. **Ballingall** to prefer the high operation in this case, were—the magnitude of the stone—its peculiar situation—and the possibility of being foiled in extracting it by the lateral operation.—*Med. Chirur. Rev. Jan.*

VI. MIDWIFERY.

56. *Premature Labour Artificially Induced.*—Maria N. aged twenty-three years, was admitted into the Clinique d'Accouchement of Pavia, under the care of Professor **Bongiovanni**. She was seven months advanced in her first pregnancy. An examination of the pelvis, by the hand, and by the pelvimeters of **Baudelocque** and of **Coutelly**, proved that the sacro-pubic diameter was reduced to two inches and nine lines, and the oblique diameter to three inches; and hence, that delivery at the full period of utero-gestation, could not be effected with safety, at least to the child. These considerations were the chief inducements for exciting a premature labour. This was attempted on the 17th of May, 1826, at 10 o'clock, A. M., by puncturing the membranes with a trocar slightly curved, after having ascertained, that the head presented at the superior strait. The patient continued up the remainder of the day—the liquor amnii slowly escaping. On the 18th, uterine pains followed, the dilatation of the neck of the uterus commenced, and at 5 A. M. of the 19th, forty-three hours after the punc-

ture of the membranes, a female infant, well formed, entered the world. The child was thus born fifty days before the full period,—it weighed six pounds and three ounces. The occipito-frontal diameter was three inches and eleven lines,—the transverse, or parietal diameter, was two inches and nine lines,—the auricular was two inches and seven lines. The infant lived and thrived well; the mother's life was at first endangered, but she recovered perfectly by the 12th of June.—*Rev. Med. Sept.* 1826.

57. *Inertia of the Uterus during Labour.*—In the same hospital at Pavia, four cases of tedious labour from deficient uterine action, are recorded—two of which were facilitated by diffusible stimuli, and two by the *ergot.* The professor decides that this last valuable article operates in a manner entirely different from that of the former. In other words, it has a peculiar and specific operation on the uterus,—a truth which we are happy to find is gaining attention in the practice of midwifery among our European brethren. It has for many years been acted on in the United States.

In the Annali Universali di Medicina, for April, 1826, three cases of labour, facilitated by the ergot, are given in detail, by L. BALARDINI.—Vide *Bulletin Universel, for Sept.*

58. *Presentation of the Umbilical Cord.*—M. DUDAN, at the sitting of the Royal Institute, on the 21st of August, reported a case of accouchement, in which the umbilical cord, having descended before the fœtus, was successfully returned by means of a gum elastic catheter. His method consisted in passing a narrow waxed ribbon through the lateral orifice near the extremity of the catheter, where it was retained by the stilet. To this ribbon was attached the umbilical cord without compressing it;—if the fold of the cord be short, from seven to eight inches, it should be fixed in the middle; if longer, the cord must be doubled, and be secured at the centre of the duplicature. In this way, it can be returned, although a slight difficulty, and a temporary interruption to the circulation in the cord, may be experienced,—as it is pushed between the head of the fœtus and the cervix uteri. When the duplicature has been effectually returned, the instrument should not be withdrawn, until the uterine contractions have forced down the head so as to prevent the re-descent of the cord,—then the stilet should be removed, and afterwards the catheter. The ribbon remains behind without any inconvenience, and will be expelled with the child. The length of the fold of cord in M. DUDAN's case was from twelve to fifteen inches.—*Rev. Med. for Sept.*

59. *Uterine Polypus.*—In the Journal Universel for September, M. JELIN relates the case of a female, aged thirty years, who had suffered for ten years with irregular but severe pains in the left hypochondriac region. She was married when twenty-four years of age, and became successively the mother of three children, none of which lived; one was born at the sixth, the others at the full period. Her pains continued severe, and were aggravated by any uterine excitement, by labour, &c. &c. Three days after her last accouchement, she was again seized with labour pains, and discharged per vaginam, "a fleshy mass, surrounded by coagula of blood, of a fibrous texture, larger than the fist, and weighing about ten ounces. At one of its extremities were the remains of the pedicle by which it had been attached to the uterus."

60. *Retro-versio Uteri.*—In the Edinburgh Journal of Medical Science, Mr. WISE relates a case of a woman, 35 years of age, in labour at the full period of utero-gestation, whose vagina he found completely blocked up. With some difficulty he passed his finger upwards and forwards to the top of the pubic arch, and there felt the os uteri dilated, and a foot presenting. On examination per rectum, the head of the child was distinguished low down in the rectum (?), filling the hollow of the sacrum. Mr.

W. learnt, that between the third and fourth month, the flow of urine became obstructed, and that a surgeon, residing nine miles distant, drew off her water once a week, there being constant stillicidium and great distress. By pressing on the head of the child through the rectum, and laying hold of the feet and dragging it in that direction, the delivery was effected, though with considerable difficulty. The patient was at first much relieved, but fever supervened, and she died on the 15th day.—*Med. Chirur. Rev. for January.*

61. *Uterine Hæmorrhage.*—Another case, in which life appeared to be preserved, after excessive uterine hæmorrhage, by the operation of transfusion, is recorded in the *February* No. of the London Medical and Physical Journal. Mr. **Burton Brown**, the medical attendant, felt convinced that his patient would not survive long enough for the operation to be performed; but he and his friend Mr. **Waller** thought it ought to be attempted. The first injection of thirteen drams, appeared to induce no particular change; in five minutes, thirteen drams of blood were again thrown into the vein, with manifest advantage—the radical artery becoming decidedly improved and the respiration more free. A further improvement was noticed after the third injection, but it was not till after the fourth injection, that the amelioration was most conspicuous. Now the pupils contracted readily on exposure to light,—she moved her limbs,—the chest fully expanded—pulse 120, equable and moderately forcible, &c.

The operation was performed December 31st, 1823—and by the seventh of January, the patient was as well as usual, after her confinements.

62. *Prolific Women.*—Two women were delivered in April, 1821, at Cadiz, each of three children. The first woman, aged 30, was delivered at 3 o'clock, A. M. of a boy, and at 6 o'clock of two daughters—each child having a separate placenta. It was the seventh childbed—she had had twins in the sixth. The second woman, aged 35, was delivered at 1 o'clock, P. M. of a girl,—between 9 and 10 o'clock, of a dead boy,—and then of a living girl. It was the ninth lying in—with the fourth she had had twins. *Bulletin, Sept.* 1826.

VII. CHEMISTRY AND PHARMACY.

63. *Chemical Changes occurring in Respiration.*—Dr. C. J. B. **Williams**, in a paper on respiration and animal heat, published in the Transactions of the Medico-Chirurgical Society of Edinburgh, rejects the generally received opinion, that carbon alone is eliminated from the blood, the oxygen of the carbonic acid emitted, being supposed to be furnished by the atmospheric air. On the contrary, he contends that carbonic acid, ready formed, is separated from the blood, and that the oxygen which disappears, has not entered into the formation of the carbonic acid evolved, but has really been absorbed into the blood. Dr. **Williams** appears to found his opinion principally on two facts; first, that it has been proved by the recent researches of physiologists, that fluids may penetrate animal membranes in the living state; and secondly, that it has been shown by **Coutanceau** and **Edwards**, that carbonic acid is emitted, even when oxygen is not inspired.

64. *Mode of distinguishing the principal Varieties of Urinary Calculi.*—Mr. **John F. Wood**, lecturer on chemistry, London, has given some observations, in the London Medical and Physical Journal for January, 1827, on the analysis of urinary calculi, which appear to us to be well drawn up. We subjoin his principal facts, nearly in his own language.

At present, six principal ingredients have been discovered in urinary calculi,—namely, uric acid, urate of ammonia, cystic oxide, phosphate of lime, oxalate of lime, and the phosphate of ammonia-and-magnesia. One or two other substances have been detected, but are of such rare occurrence, as not to require notice.

These ingredients may be distinguished from each other by the following tests. Three of them are soluble in cold solution of potassa; namely, the uric acid, urate of ammonia, and cystic oxide.

The *uric acid*, during its solution in potassa, evolves no ammoniacal smell, and gives a copious white precipitate on the addition of dilute muriatic acid.

The *urate of ammonia*, under the same circumstances of solution, disengages copious fumes of ammonia, readily detected by the smell.

The *cystic oxide*, during its solution in potassa, gives off no ammoniacal fumes, nor is the resulting solution precipitated by dilute muriatic acid. It is likewise soluble in dilute acids, and disengages a peculiar fetid odour, on the application of heat.

Four varieties of the calculi mentioned, are soluble in muriatic acid, diluted with four parts of water; namely, the phosphate of lime, the phosphate of ammonia-and-magnesia, or triple phosphate, the oxalate of lime, and the cystic oxide. They are all precipitated by ammonia, and the fixed alkalies, except the cystic oxide, which, being equally soluble in acids and alkalies, is of course not affected.

Of the three varieties, soluble in muriatic acid and precipitable by ammonia or the fixed alkalies,—

The *phosphate of lime calculus* is distinguished by its undergoing, when heated before the blowpipe, a very trifling alteration. No péculiar smell is perceived, excepting that of burning animal matter when the heat is first applied. The ash is white, and not alkaline, dissolves readily and quickly in dilute acids; and the solution gives a precipitate with pure ammonia, and with its oxalate, provided there be no excess of acid.

The *triple phosphate calculus* is known by its suffering likewise very little alteration before the blowpipe, unless the heat be very strongly urged, when it fuses imperfectly. Copious fumes of ammonia are disengaged. The ash is generally brown, not alkaline, is soluble but not readily in dilute muriatic acid, and precipitable in the form of crystalline grains by ammonia, showing the re-formation of the triple phosphate.

The *oxalate of lime calculus*, when heated before the blowpipe, blackens, is enlarged in volume, and leaves a great quantity of ash of an intense whiteness, which is soluble with effervescence in dilute muriatic acid; unless the heat have been intense and applied for a long time, when it dissolves quietly. Pure ammonia produces no precipitate from the solution, but a copious bulky one is thrown down by the oxalate of ammonia. The ash gives a deep red tinge to moistened turmeric paper, and is in fact pure lime.

Mr. Wood then gives the following characters to calculi of a mixed nature.

"*Uric Acid and Oxalate of Lime.*—When calculi of this composition are digested in solution of potassa, the potassa will dissolve all the uric acid, which may be obtained by adding dilute muriatic acid to the filtered liquor; and the solid residue, being heated before the blow-pipe, will give the results mentioned above. This mixture generally decrepitates loudly when first heated.

Uric Acid and Phosphate of Lime.—This mixture may be treated as the last; the uric acid being dissolved out by potassa: and the remainder may either be heated before the blowpipe, or dissolved in dilute muriatic acid, and will afford the results mentioned under the head of phosphate of lime calculi.

Uric Acid and Triple Phosphate.—When calculi of this composition are digested in solution of potassa, the acid is separated; a very powerful ammoniacal odour is evolved; and the undissolved portion, when well washed and dissolved in dilute muriatic acid, will, on the addition of ammonia, be reconverted into triple phosphate, in the form of small acicular crystals.

Phosphate of Lime, and Phosphate of Ammonia-and-Magnesia, or the Fusible Calculus.—This variety is immediately recognised by readily fusing before the blowpipe into an opake, white, shining enamel. It suffers very little diminution in bulk, gives off copious fumes of ammonia, and the ash is not alkaline.

Phosphate of Lime and Oxalate of Lime.—These calculi do not fuse before the blowpipe, but swell up in proportion to the quantity of oxalate of lime they contain, and give out no smell of ammonia. The ash is alkaline, and, if it be dissolved in dilute muriatic acid, and the solution precipitated by ammonia and filtered, a precipitate is produced in the filtered fluid by the oxalate of ammonia. Phosphoric acid will dissolve out the phosphate, and leave the oxalate.

Uric Acid and Fusible.—These calculi blacken before the blowpipe, diminish in bulk in proportion to the quantity of uric acid, evolve a powerful smell of ammonia, and presently fuse. The ash is very slightly alkaline, dissolves without effervescence in dilute muriatic acid, and is precipitable by ammonia. We are indebted to Dr. WOLLASTON for the following method of analysing calculi of this description:—Digest in cold distilled vinegar, which takes up only the triple phosphate; dilute muriatic acid will next separate the phosphate of lime; and the remainder, which will be the uric acid, may be recognised by the usual tests.

Triple Phosphate and Oxalate of Lime.—This mixture does not fuse before the blowpipe, gives off a pungent ammoniacal odour, swells up in proportion to the quantity of the oxalate, and does not perceptibly diminish in quantity. The ash is more or less alkaline according to circumstances, dissolves readily in dilute muriatic acid, and, after ammonia has precipitated all it can throw down, a further deposition takes place in the filtered liquor on the addition of the oxalate of ammonia.

Fusible and Oxalate of Lime.—This calculus differs from the last only in undergoing a partial fusion after the heat has been applied a short time."

65. *Chemical Nature of the Matter of Melanosis, or Black Degeneration.*—This matter possesses an appearance very similar to that, which the contents of a decaying lycoperdon, or common puff-ball, would present, if rendered cohesive by the addition of a small proportion of liquid. It has a deep brown colour, is slightly fibrous, and when agitated in water or alcohol, and allowed to rest, deposites, in part, in the form of a pulverulent sediment of the same colour.

Dr. HENRY obtained the following results from a portion of the softened matter, after it had been kept some time in spirit:

1. By filtering through paper, much of the colouring matter remained on the filter.
2. Boiling did not destroy the colour, even with the assistance of a little caustic potassa.
3. It is not changed by acids, even when heated, except by the nitric, which changes it to yellow.
4. A stream of chlorine destroys the colour of the liquid, and throws down light, fawn-coloured flocculi.
5. Corrosive sublimate precipitates the whole of the colouring matter.
6. Nitrate of mercury, and muriate of tin, produce the same effect, but more slowly.

From these experiments, Dr. HENRY concludes, that the matter is a peculiar secretion, analogous, in some properties, to the colouring matter of the blood.—*Fawdington on Melanosis*, London, 1826.

66. *Detection of Arsenic and Corrosive Sublimate, when administered as Poisons.*—In the London Medical and Physical Journal, for December, 1826, will be found a good paper on this subject, by Dr. Venables, from which we have prepared the following abstract:—Besides the objection heretofore urged against nitrate of silver as a test for arsenic, that it produces with phosphate of soda, a similar precipitate as with solutions of arsenic, Dr. Venables objects to it very properly on account of its being precipitated both by the fixed alkalies and their soluble salts. It is also an ineligible test, on account of its forming a white precipitate of chloride of silver, in case any muriates are present, thereby embarrassing the operator and obscuring his results.

Dr. Venables thinks, that the most simple plan of obviating these objections to the nitrate of silver, is to add it to the suspected solution, before adding an alkali, which is necessary to the efficiency of the test, as a re-agent for arsenic. By proceeding thus, if no precipitate is produced, we are sure there are neither alkaline phosphates nor muriates in solution, and may now add the alkali, when the nitrate will detect the arsenic, the precipitate being disembarrassed from any admixture of phosphate or chloride of silver. If the preliminary trial produce a precipitate of phosphate or chloride of silver, or both, then the nitrate should be cautiously added, until the precipitation ceases, when the liquor must be subjected to filtration, and then tested by the nitrate in the appropriate manner for the detection of arsenic.

Dr. Venables approves of the proposal of Mr. Hume, to employ the ammoniuret of copper, formed by adding ammonia to any soluble salt of copper, and continuing the addition, until nearly the whole of the precipitate is re-dissolved, in order to detect arsenic. The solution, thus obtained, which Dr. V. thinks is preferably prepared from the nitrate, has a beautiful deep blue colour, and is changed to green, when added to any fluid, holding arsenic in solution, the transition of colour being extremely evident and satisfactory. Now, a peculiar advantage of this test is, that it is not affected by the alkaline phosphates or muriates.

Dr. Venables prefers a white card, or white plate, on which to perform the necessary trials, alleging that a drop or two of the suspected liquid is quite sufficient for the purpose. Dr. V. gives it as his opinion, that the ammoniuret of copper is the most certain test for arsenic, "as being subject to the fewest sources of fallacy."

Dr. V. has ascertained that hydriodate of potassa is a good test for corrosive sublimate, provided it be not held in solution by a spirituous solvent. Thus, if we add to a solution, containing corrosive sublimate, a dilute solution of hydriodate of potassa, there will be produced a yellowish, cloudy appearance, which soon assumes a beautiful red colour. Dr. V. adds, that this is a very delicate test.

Dr. Venables next considers the subject of the best method of decolourising fluids, as connected with the subject of detecting poisons, and comes to the conclusion, that animal charcoal, proposed by Mr. Phillips, to effect this purpose, acts mechanically, and only as a fine filter.

After all colouring matters, which are merely suspended, have been separated by filtration through purified ivory-black, Dr. Venables proceeds to state, that any remaining colouring matter must be chemically dissolved, and will be either of animal or vegetable origin, except, indeed, that the sulphate of copper may be occasionally present, as when it has been prescribed as an emetic. This salt, if present, can be readily removed, and afterwards the dissolved colouring matters may be destroyed by means of a current of chlorine. After the suspected liquid has been thus freed from colouring principles, it may have a green tinge from the presence of chlorine, which must be expelled by boiling. It is then to be assayed by the usual tests for the suspected poison.

Dr. **Venables** was not content with applying successfully this plan of decolouration, and the subsequent application of re-agents to the most heterogeneous mixture of solid and liquid aliments and medicines, that he could devise, fearing that the circumstances, under which arsenic is presented to us in the human stomach, in cases of poisoning, might not be sufficiently imitated; and, accordingly, to meet this objection, he records the following experiment:—"A *hearty* dinner, consisting of fish, soup, meat, (fresh and salt,) with a due proportion of bread, potatoes, vegetables, salad, &c. was eaten; after which, pastry, with cheese, was eaten, and a tolerable quantity of beer drank; three glasses of white, and three glasses of port wine were taken, and after dinner, a little fruit, with a glass of brandy was taken. A cup of coffee, and one of strong tea, with sugar and milk, were the last things swallowed." The stomach was then discharged by an emetic, into a basin containing five grains of arsenic. The whole was boiled with twelve fluid ounces of distilled water, and afterwards filtered through paper. It was then boiled with ivory-black and filtered through it, and afterwards submitted to the action of a current of chlorine. When, finally, the liquid became transparent and colourless, it gave the most decided and satisfactory indications of the presence of arsenic, by the use of appropriate re-agents.

Dr. **Venables** very properly adds the following remark: "It should be borne in mind, that the means of discovering this poison in the humid way should be rendered subsidiary to its metallisation. The collection of the precipitates, and their subsequent decomposition by black flux, should never be neglected."

67. *Preparation of Periodide of Mercury.*—This iodide, which has been employed by M. **Paillard**, as an external application, with great success, in syphilitic swellings of the lymphatic glands, and in venereal and scrofulous ulcerations, is prepared as follows: Add a solution of hydriodate of potassa to a solution of pernitrate of mercury. By double decomposition, there will be formed, nitrate of potassa, water, and a red precipitate, which is the iodide in question. It is applied in alcoholic or etherical solution, mixed with lard, or suspended in oil.—*Nouvelle Bibliothèque Médicale, Dec.* 1826.

VIII. MEDICAL JURISPRUDENCE.

68. *Poisoning with Fox-glove.*—Cases of this species of poisoning are very rare; and the following, from the London Morning Chronicle, quoted in the Edinburgh Journal, will therefore possess more interest.

Jacob Evans, a herbalist and quack-doctor, was tried at London for manslaughter, by administering to an apprentice lad an over dose of digitalis. For some trivial complaint, on which the quack was consulted, he advised a strong decoction of digitalis to be given as a *purgative;* and the lad took, one morning, almost six ounces of such a preparation, (strength not stated.) Very soon afterwards, he was attacked with sickness, vomiting, severe pains in the bowels, and afterwards with purging. Towards the afternoon, he became lethargic, and slept profoundly for several hours. About midnight he awoke, still affected with vomiting, and pain in the bowels. During the night, he was seized with general convulsions. A medical man, who saw him early the next morning, found him violently convulsed, with the pupil dilated and insensible, and the pulse slow, small, and irregular. Coma soon succeeded, and death took place within twenty-two hours after the poison was swallowed.

Examination. External membranes of the brain much injected with blood. Inner coat of the stomach red in some parts; the other organs healthy.

The prisoner was found not guilty; the judges being of opinion, that, as the friends of the deceased applied for his advice, the act did not come under the statute regarding manslaughter.

69. *Propensity to Murder, Infanticide, and Suicide.—Suicide from Imitation.*—Our phrenological readers will recollect some curious instances of this horrible impulse. At a late sitting of the Paris Academy of Medicine, Dr. Barbier, of Amiens, related the case of a woman, twenty-four years of age, who, having lost a child three months old, became the mother of a second. Ever since the trial of Madame Cornier, this woman has been possessed with a propensity to destroy this second infant. This feeling was at first feeble, but gradually augmented; and at last reached such a height, that the sight of a knife forced her to cry out for assistance, lest she should murder her own offspring. She was then admitted into the hospital at Amiens, and was under the care of Dr. Barbier. There was nothing extraordinary discovered in her moral faculties, except this dreadful propensity; and her intellect was perfectly sane. She complained of alternate pains in the epigastrium and head; and the *former* was always present when the horrid moral disease came on. Leeches were applied alternately to the epigastrium and head; but no improvement had taken place at the date of the report.

The narration of the above case elicited several of a parallel kind from the different members of the Academy. M. Marc saw a woman who was affected with an irresistible desire to destroy her offspring. She had no discoverable bodily disease, but intestinal worms. M. Bricheteau stated the case of a woman, who was seized with the horrible desire to murder her mother and one of her children; and it appeared to have been excited by the view of the place where a previous atrocity had been committed—"the spot where Papavione executed his criminal act." She was secured, and by degrees the murderous propensity subsided. M. Esquirol had become acquainted with six instances of a similar nature, since the trial of Madame Cornier: among them was a protestant minister, who attempted the life of his favourite child. M. Villerme related the case of a woman, who, immediately after hearing the account of an assassination, was tormented for three nights with the desire to destroy her daughter, seven years old, and had secreted a weapon for the purpose.

M. Barbier then asked, whether any of the members had seen such cases without any physical ailment; and expressed his belief, that corporeal disorder was an indispensable preliminary condition, or, rather, predisposition. He knows a lady who is occasionally affected with monomania, *but only since her stomach has been disordered.*

M. Esquirol was quite of this opinion. All those he has seen affected with monomania were melancholics, and subject to disorders of the stomach.

MM. Castel and Marc then followed, on the powerful effect of example; and on the great impropriety of a practice, (very common among us in the United States,) of publishing accounts of suicide, infanticide, and homicide, at the risk of exciting the imitation of them. Of the force and justness of this remark most of the above cases furnish striking illustrations; and M. Castel added the following remarkable fact. A soldier, at the *Hotel des Invalides*, having hanged himself on a post, his example was followed, in a very short time, by *twelve others;* but by removing the fatal post, this *suicidal epidemic* was put an end to.

70. *Wound of the Heart not Mortal for twenty days.*—M. Ferrus communicated to the Paris Academy, the case of a lunatic, aged thirty-four years, who stabbed himself with a stilletto in his left side. Two days afterwards, he was admitted into the Bicêtre, declaring that he had not withdrawn the instrument. The wound had cicatrized, but was very painful to the touch. The pulse was small and intermitting; the breathing laborious. Below the wound, an undulating sound was heard, like the passage of blood through a varicose aneurism. Blood-letting, general and local, was employed; but the breathing became more and more laborious every day; and on the twentieth day from the reception of the wound, he expired. On dissection, ten or twelve ounces of reddish sanies were found in the cavity of the pericardium, mixed with fibrinous clots. The pericardium itself was inflamed and thickened. The stilet was found *passing quite through the left ventricle* of the heart, and projecting some lines *into the cavity* of the right ventricle.

BILLS OF MORTALITY.

Table, showing the relative mortality in persons of different ages, and from different diseases, in Boston, New York, Philadelphia, Baltimore, and Charleston, for the year 1826.

Out of every hundred deaths, the number who died under one year, from one to two years old, &c. &c. are as follow, viz.

	BOSTON.	N. YORK.	PHILAD.	BALT.	CHAR.
Under 1 year	24.801	24.774	27.704	26.483	23.69
From 1 to 2	9.809	9.572	9.154	8.897	
2 to 5	5.981	7.038	6.865	7.180	7.07
5 to 10	3.588	3.620	3.228	3.694	
10 to 20	3.987	5.087	4.529	6.088	5.78
20 to 30	10.925	12.427	10.338	9.261	11.26
30 to 40	12.6	12.628	10.889	11.967	16.88
40 to 50	9.331	9.712	9.154	9.262	9.95
50 to 60	5.821	6.636	6.528	6.816	9.03
60 to 70	4.864	4.062	5.035	4.578	7.46
70 to 80	3.588	2.654	3.252	3.069	3.66
80 to 90	1.674	1.428	2.361	2.133	3.79
90 to 100	.319	.302	.771	.468	.78
100 to 110		.06	.168	.104	.65
110 to 120			.024		
Unknown	2.712				
	100.	100.	100.	100.	100.
Diseases.					
Still Born,	6.937	6.672	7.371	5.047	
Consumption,	18.	16.489	14.141	15.921	16.230
Dysentery,	3.748	3.901	1.734	2.445	.654
Dropsics,	5.661	7.038	5.83	4.37	9.292
Convulsions,		5.671	6.215	2.861	4.45

QUARTERLY LIST OF AMERICAN MEDICAL PUBLICATIONS.

Introductory Lecture to the Course of Anatomy and Physiology in Rutgers' Medical College, New York. Delivered November 16, 1826. By John D. Godman, Professor of Anatomy and Physiology. First edition, 1826: Second edition, 1827. H. Stevenson, Broadway, New York.

An Oration, delivered before the Philadelphia Medical Society, pursuant to appointment, on the 3d of February, 1827. By R. La Roche, M. D., Honorary Member of the Society, Member of the American Philosophical Society, &c. Published by the Society. Philadelphia, 1827.

Vide notice of this Oration, at p. 361, of this number.

A Manual of Chemistry, on the Basis of Professor Brande's: Compiled from the Works of Brande, Henry, Berzelius, Thomson, and others. Designed as a Text Book, for the use of Students and Persons attending Lectures on Chemistry. By John W. Webster, M. D., Lecturer on Chemistry in Harvard University. Boston, 1826. 8vo. pp. 603.

Vide notice, at p. 368, of this number.

An Inaugural Discourse, delivered at the opening of Rutgers' Medical College, in the city of New York, on Monday, the 6th day of November, 1826. By David Hosack, M. D., Professor of the Institutes, Practice of Physic and Clinical Medicine, &c. New York, 1826.

Observations on the Transplantation of Teeth, which tend to show the impossibility of the success of that operation. Supported by a New Theory. By James Gardette, Dentist.

The New York Medical and Physical Journal, for January.

The American Medical Recorder, for January.

The Philadelphia Journal of the Medical and Physical Sciences, for January. *In Exchange.*

The New England Journal of Medicine and Surgery, for January. *In Exchange.*

The Quebec Medical Journal. "Journal de Médecine," &c.

The Carolina Journal of Medicine and Agriculture.

Boston Medical Intelligencer.

AMERICAN EDITION OF A FOREIGN WORK.

An Essay on Morbid Sensibility of the Stomach and Bowels, as the proximate cause, or characteristic condition, of Indigestion, Nervous Debility, Mental Despondency, Hypochondriasis, &c. &c. To which are prefixed, Observations on the Diseases and Regimen of Invalids on their return from hot and unhealthy climates. By James Johnson, M. D. of the Royal College of Physicians, &c. Philadelphia, 1827. 12mo. pp. 154.

PROPOSED AMERICAN PUBLICATION.

Wells & Lilly, of Boston, propose to publish, by subscription,

A Series of Engravings, illustrative of the different Stages of the Small Pox and Varioloid Diseases; to which will be added, an Engraving, representing the Vaccine and Chicken Pox Eruptions during their course. By J. D. Fisher, M. D.

"The paintings, from which eleven of these plates are to be engraved, and of which they are to be the exact copies, were made in Paris, in 1825-6, at the time when the diseases which they are to represent, prevailed epidemically in that city. They were executed by a French artist for, and under the immediate direction and personal observation of, the author of the proposed publication, and were all commenced and finished at the bed-side of the patients from whom they were taken. The engravings will be printed upon the best drawing paper, and will be coloured by the author's own hand, or under his immediate inspection."

We have had the pleasure of examining the original drawings of Dr. FISHER, for the proposed engravings. They are very excellent representations, and when suitably engraved and coloured, will, no doubt, be exceedingly useful to the rising generation of physicians in our country—who, fortunately, have had very few opportunities of noticing this loathsome disease. We regret, that *any* cases, even in our large cities, with their mixed population, should be presented to the physician,—and although this may not be wholly avoided by human prudence, it nevertheless becomes the serious and conscientious duty of the civil, as well as of the medical, guardians of the public health, to inquire how far the guilt is ours, and whether the inestimable blessing of the vaccine inoculation has been duly appreciated and improved.

We are happy to learn, that the patronage already extended to the proposed work of Dr. FISHER, is sufficient to insure its publication—which may, therefore, be expected in October or November next.

Erratum in No. 5.

Page 16—for "Those I have found," &c. read, Those that have been found, &c.

INDEX.

Page
Absence of the Gall Bladder, - 374
    Uterus, - 376
Absorbents, communication of, with Veins, - - - 375
Absorption, Barry on, - 177
    Cutaneous, Dill's experiments on, 378
Abstinence from Food and Drink in Dropsy, - - - - 397
Acetates of Mercury discovered to be two, one of which is dangerous, - - - 208
Active and Passive Hæmorrhages, - - - - - - 244
Aloes may be useful in Hæmorrhoids, - - - - 193
Amidin of Saussure, - - 208
Amputation of the Lower Jaw, 198, 199, 407
Amputation of the Neck of the Uterus, - - - 201, 402
Analogies of Disease, Caldwell on the, - - - - - 173
Analysis of a Black Liquid from a Cancerous Stomach, - 207
ANALYTICAL REVIEWS, - 72, 293
Analyses of Alimentary Feculæ, 208
Analysis of Bryonia Alba, - 207
    of the Matter of Melanosis, - - - 410
    of fever, Caldwell on the, - - - 171
Anasarca cured by the Dry Regimen, - - - - - 397
ANATOMY, - - - 174, 376
    of the Uterus, - 376
    Morbid, its importance, - - 347
Anchylosis cured by formation of Artificial Joints, - - 279
Andral on Tubercles in the Lungs, - - 386
    on the Circulation in the Spleen, - - 376

Page
Anencephalos, Ellis's Description and Figure of an, - 174
Aneurism, Popliteal, unsuccessful operation in, and unusual cause, - 199
    Varicose, cured by cold applications, 401
    Subclavian, Dupuytren's case, - 406
Angina Maligna and Gangrænosa, Bretonneau on, - 181, 188
Animal Matter in the Atmosphere, Instrument for discovering, - - - 206
Apoplexy of Lungs, - - 386
Ardent Spirits, bad effects of, 267
Arnold on the connexion of the Sympathetic Nerve with the seventh pair, - - - 175
Arrow-root, analysis of, - 208
Arsenic, Dr. Christison's test for, 210
    Mr. Phillips's mode of preparing, for tests, 210
Arsenic and Corrosive Sublimate, how detected when used as Poisons, - - 413
Artery, Carotid, Ligature to, 406
    Femoral, high bifurcation of, and effect in, the operation for Popliteal Aneurism, - 199
Arteries, Ligatures to, - 404
Artificial Anus at the Umbilicus, produced by the discharge of a Fœtus, 204
    Respiration in cases of Poison, - - 277
    Joints, a new operation for Anchylosis, by J. R. Barton, 279, 400
    Joints, accidentally formed, proving advantageous, - 403
Asclepias Gigantea, or Madar, 196

Asphyxia, propriety of the use of Insufflation in, - - 380
Astragalus removed by Dr. Stevens, - - - - - 200
Atmosphere, means of discovering Animal Matter in the, - 206
  effects of, on exposed cavities, 260
Autumnal Fevers of Savannah, Daniell on, (noticed) - 164

Bache, Dr. Benj. F., on the non-mercurial practice in Syphilis, 197
Balart's discovery of Bromine, 205
Ballingall's high operation for Calculus, - - - - - 408
Barbier on Propensity to Murder, 415
Barbier and Magendie on the effects of the constituents of Opium, - - - - 399
Barry on Absorption, - - 177
  on the suction of the Thorax on the Venous Blood, - - - 177
Barton, J. Rhea, on formation of Artificial Joints in the treatment of Anchylosis, - 279, 400
Bassett's case of Calculus, with a Fish-bone as a nucleus, 401
Baths, Cyanogenated and Stupifying, - - - - - 192
Baudelocque on Anatomy of the Uterus, - - - - - 376
Becker on the non-mercurial treatment of Syphilis, 197, 401
Bell's case of Popliteal Aneurism, and high bifurcation of the Femoral Artery, - - 199
Belladonna and Nitrate of Silver in Epilepsy, - - - 394
BIBLIOGRAPHICAL NOTICES, 164, 358
  Bostock's Physiology, vol. 2, 368
  Caldwell's Analysis of Fever, 171
    Medical and Physical Memoirs, 172
  Cooke and Turnor on White Mustard-seed, - - 365
  Daniell on the Autumnal Fevers of Savannah, - 164
  Johnson on Morbid Sensibility of Stomach and Bowels, 358
  La Roche's Oration, Physiology, - - - - - 361
  Trial for Mal-practice, in an injury of the Hip, - 169
  Venables on Diabetes, - 167
  Webster's Manual of Chemistry, - - - - - 368
Bichloride of Lime, mode of making, - - - - 206
Bifurcation of the Femoral Artery in a case of Popliteal Aneurism, - - - - 199
Bills of Mortality, - - 417
Biography of Dr. S. P. Griffitts, 151
  of Dr. Peter Chirac, 343
Black Vomit from a Cancerous Stomach, chemically resembled Blood, - - 207
  in Endemic of Key West, - - 228
Black Degeneration, or Matter of Melanosis, analysis of - 412
Bleeding in Pregnant Females, effects of, - - - - 302
Blood, its circulation in the Spleen, - - 376
  its changes in disease, 347
  its colouring matter, 380
  Vessels, do they communicate with the Absorbents? - - 375
Bostock's Elementary System of Physiology, vol. 2. noticed, 368
Boston Medical Intelligencer, 212
Boyle on scruple doses of calomel in Syphilis, - - 194
Bouilleaud on Apoplexy of Lungs, - - - - - 386
Brent's test of Respiration in the new-born infant, - - 209
Breschet and Edwards' Experiments on Pulmonary Exhalation, - - - - - - 377
Bretonneau's case of Compression in Erysipelas, - - 185
Brome, or Bromine, a new elementary substance, - - 205
Bronchocele, relieved by tying the Thyroid Arteries, - 403
Broussais' Physiology, translation of, 211
  review of, 320
  Doctrines, influence of, - - - - 390
Brown's case of Transfusion, 400
Bryony, analysis of, - - 207

Calculus, how to distinguish the varieties of, - - 410
  extracted in Females, 202, 203

- Calculus, a Fish-bone the Nucleus of, - - - - 401
- Caldwell's Analysis of Fever, noticed, - - 171
  - Medical and Physical Memoirs, - 172
  - Dissertation on Contagion of Yellow Fever, - - 172
  - Thoughts on the Analogies of Disease, - - 173
- Calomel in scruple doses in Syphilis, - - - - - 195
- Cancer Uteri, - - - - 307
  - of the Rectum extirpated, - - - - 201
  - of the Stomach, analysis of a Black Liquid from, - - - 207
- Carotid, common, tied, after a puncture of the External, 201
  - after a rupture of its Parietes, - 406
- Cases, Absence of Gall Bladder, 374
  - of Uterus, - 376
  - Anchylosis cured by the formation of an Artificial Joint, - 279, 400
  - Anasarca cured by the Dry Regimen, - - 397
  - Anencephalos, Ellis, 174
  - Astragalus, removal of, Stevens, - - 200
  - Bifurcation of the Femoral Artery, occasioning a failure of the operation for popliteal aneurism, Bell, - - 199
  - Collection of Milk in the substance of the Mamma, - - - - 407
  - Compression in Erysipelas, Bretonneau, - 186
  - Constitutional Irritation, Travers, - - 87, 98
  - Convulsions, infantile, from Spasm of the Intestines, - - - 57
  - Copaiba in Chronic Bronchitis, La Roche, - 43, 49
  - Discharge of Fœtus at the Umbilical Region, Weese, - - - 204
  - Double Inguinal Hernia on the same side, Frazer, - - - 200
  - Dyspepsia cured by Nitrate of Silver, - 395
  - Enlarged Ovary cured by Iodine, - - 396
  - Extravasation of Blood in the Spinal Canal, - 403
  - Epilepsy cured by Tartar Emetic Ointment, Peysson, - 191
    - relieved by Digitalis, - 398
    - cured by Galvanism, - 187
  - Excision of a Cancer of the Rectum, Lisfranc, 201
  - Excision of the Ribs and their Cartilages, Cittadini, - - - 200
  - Extraction of a Urinary Calculus from the female, by dilatation, Chevalier, - - 203
  - Extraction of a Urinary Calculus from the female, by dilatation, Ramsay, - - - 203
  - Extraction of a Calculus from a female, by incision, Hamilton, - 202
  - Fevers, treated by leeches to the epigastrium, and demulcents, Morris, - - - 62, 67
  - Fever, Yellow, - 229
  - Hermaphrodism in a long-armed Ape, Harlan, - - - 176
  - Injured Hip-joint, on which a prosecution for mal-practice was founded, Warren, 169
  - Ligature of the common Carotid Artery, for a puncture of the external, Travers, - - 201
  - The same, by Fleming, 406
  - Lower Jaw amputated, 198, 199, 407
  - Paralysis, and other nervous derangement, from the extraction of a tooth, Pickett, - 68

Cases, Pin retained in the bowels for years, and expelled, Crockett, - 183
  Presentation of umbilical Cord, - - - 409
  Recovery from Poison of Opium by Artificial Respiration, Ogilvie, 277
  Stramonium, poisoning by, Meigs, - - 33
  Syphilis treated with scruple doses of Calomel, Boyle, - - 195
  Transfusion after uterine Hæmorrhage, - 410
  Trismus from a suppressed Gonorrhœa, - 401
  Uterine Hæmorrhage, - 203, 410
    Polypus, - - 409
  Vaccination of various animals, Numan, 179, 180
  Varicose aneurism cured by cold applications, 401
Caventou's Analysis of various farinaceous articles, - - 208
Cerebral lobes, laws of formation of, - - - - - 175
Chemical changes during respiration, - - - - - 410
CHEMISTRY AND PHARMACY, 210, 405
Chemistry, Webster's Manual of, noticed, - - - 368
Chevalier's extraction of a Calculus from a Female, - - 203
Chirac on Malignant and Pestilential Fevers, &c. - - 343
Christison's Test for Arsenic, 210
Cinchona in Acute Rheumatism, 395
Circulation of Blood in the Spleen, - 376
  influenced by Atmospheric pressure, - - 177
Cittadini's Cases of Excision of the ribs and cartilages, - 200
Colour of Blood, - - - 380
Colouring matter of Icterus differs from Bile, - - - 207
Compression in Erysipelas, - 186
Condie on Hæmorrhages, - 236
Constitutional Irritation, Review of Travers on, - - - 72
Consumption, Effects of Diet in, 387
Convulsions, Infantile, from Spasm of Intestines, Parrish on, - - - - - - 51
Convulsions, North on, Review of, 98
Cooke and Turnor on White Mustard-Seed, - - - 365
Copaiba, Balsam of, La Roche on, in Chronic Bronchitis, 34
Corrosive Sublimate, subjects for dissection preserved by injections of, - - - 207
Corrosive Sublimate and Arsenic detection of, when used as Poisons, - - - 413
Coxe, Ed. Jenner, on use of Iodine, - - - - - - 396
Crockett's employment of Aloes in Hæmorrhoids, 193
  note on the retention of a pin in the Bowels for a number of years, - - 183
Croup, Bretonneau on Identity of, with Angina Maligna, 181, 188
Cutaneous Absorption, Dill on, 378
Cyanogenated Baths, - - 192
  Purgative Syrup, 192

Dill on Cutaneous Absorption, 378
Diphtheritis, - - 181, 188
Diseases of Females,—Review of Dewees on, - - - 293
Dissections in Yellow Fever, &c. - 229, 350
  Injuries in 92, 405
Dodelin's expeditious method of making Mercurial Ointment, 208
Dothinentery, - - - 388
Double Inguinal Hernia on the same side, - - - - 200
Drousart on European Opium, - - - - 196, 399
Dudan's Case of Presentation of the Umbilical Cord, - 409
Dulong's Analysis of Briony, 207
Dupuytren's Operation for Axillary Aneurism, - - - 406
Dupuytren's Cases of Amputation of the Lower Jaw, - 407
Duration of Human Pregnancy, 209
Dysentery, bilious, Epidemic on the Maine and Loire, - - 185
Dyspepsia, &c. &c. Johnson on, 358
Dublanc on the Poppy near Paris, - - - - 208

- Daniell's Essay, Waring's comments on, - 1
  - on the Autumnal Fevers of Savannah, 164
- D'Astros, M. on the Dry Regimen in Anasarca, - - 397
- Daulioulle on Hæmoptysis from Worms, - - - 386
- Dead Bodies preserved by Corrosive Sublimate, - - 207
- Desmoulins on the Laws of the Formation of the Cerebral lobes, - - - - - 175
- D'Etoile's Experiments on Pulmonary Insufflation, - - 380
- Dewees on Diseases of Females, 293
- Diabetes, Venable on, - - 167
- Diet, Animal, its effects, - 221
  - Effects of, in Consumption, 387
  - Rules for regulating, in Dyspepsia—morbid sensibility of Stomach and Bowels, &c. &c. 359
- Digestion, coats of the Stomach after death, - - - - 483
- Digitalis in Epilepsy, - - 398

- Earle's case of Bronchocele relieved by Ligatures to Thyroid Arteries, - - - - - 403
- Edwards and Breschet on Pulmonary Exhalation, - - 377
- Effusion of Blood on Spinal Marrow, - - - - - 403
- Elementa Physiologiæ, Halleri —Review, - - - - - 133
- Ellis' description and Plate of an Anencephalos, - - 174
- Elytroid Pessaries, - - - 204
- Emerson's Memoir of Dr. S. P. Griffitts, - - - - - 151
- Emlen on Effects of Intemperance on Society, and on the means of prevention, - - 267
- Endemic of Thompson's Island —or Key West, - - - 213
- Endermic Medication, - - 189
- Engelhart on Colouring Matter of the Blood, - - - 380
- Epidemic—Bilious Dysentery on the Maine and Loire, - 185
- Epilepsy, treated by Galvanism, 187
  - Frictions of Tartar-Emetic Ointment in, 191
  - Belladonna and Nitrate of Silver in, - 394
- Epilepsy, Digitalis in, - - 398
- Ergot—remarks on King's cases of injury from, by a London writer, 182
  - advantages in cases of Inertia of the uterus, 409
- Erosion of Stomach, - - 382
- Erysipelas, compression in, - 186
- European Opium, does not cause Narcotism, - 196, 399
- Exanthematous Ophthalmia, 180, 187
- Excision of ribs and their cartilages, - - - 199
  - of cervix Uteri, 201, 402
  - of Portion of the Rectum, - - - 201
  - of head of the Humerus, - - - 402
- Exhalation, Pulmonary, Experiments on, - - - - 377
- Experiments by Finley, on Effects of Gases on Exposed Cavities, 260
  - by M. Segalas on Poisoning, - 376
  - by M. M. Breschet and Edwards on Pulmonary Exhalation, - - 377
  - by Dill, on Cutaneous Absorption, 378
  - by D'Etoile on Insufflation as a remedy for Asphyxia, - - 380
  - on passage of Matters into the Urine from the Stomach, - 378
  - on the Red Colour of mucous membranes after death—settling of blood or Inflammation? - 383
- Extraction of a Tooth, Paralysis, &c. caused by, - - 68
- Extravasation of Blood on Spinal Marrow, - - - 403

- Farinaceous Substances analysed, - - - - - - 208
- Fœtus, Human, development of, 375

Feculent articles of diet, analysed, - - - - - - 208
Ferrus' case of wound of the heart, not mortal for 20 days, 416
Females, diseases of, Review of Dewees on, - - - - 293
Fenoglio, Dr., case of Trismus from a suppressed Gonorrhœa, 401
Fever, Yellow and Bilious, Waring on Inflammation of mucous membrane in, 1
  Comparative Results of different treatment of, - - - - - 29, 390
  Morris' cases of, treated on the Broussais plan, 61
  Autumnal, of Savannah, Daniell on, - - 164
    Waring on, - - 1
  Puerperal, - - - 311
  Malignant and Pestilential, Review of Chirac on, - - - - - 343
  Dissection of subjects dead of, - - 229, 349
  Yellow, contagion of, - 384
Fibres of Veins, Rudolphi's account of, - - - - 178
Fielding on Ligatures to Arteries, 404
Finley on Tartar-Emetic in Ptyalism, - - 193
  on Effects of Gases, on exposed surfaces, - 260
Fissure of Palate, cured by Stevens, - - - - - 233
Fleming's case of Wound and Ligature of the Carotid artery, - - - - - - 406
Fluxes of Blood, - - - 236
Foramen Ovale, changes its position by Respiration, - - 209
Fox-glove, Poisoning with, 414
Fracture of Pubis, &c. - - 400
Friction, Sulphate of Quinine administered by, - - - 399

Gall-Bladder, absence of, - 374
Galvanism successful in Epilepsy, 187
Garot on Keyser's Pills, with the discovery of a dangerous peracetate of Mercury, - 208
Gastralgia, cured by Prussic Acid, - - - - - 192
Godelier's case of Absence of Gall-Bladder, - - - 375
Gonorrhœa, suppression of, followed by Tetanus, - 401
Granville's Septometer, an Instrument for detecting Animal Matter in the Atmosphere, 206
Graviditas Interstitialis, - 204
Gregory's Opinions on Vaccination, - - - - - 183
Griffitts, Dr., Emerson's Memoir of, - - - - - - 151

Hæmorrhages in Yellow Fever, 228
  Condie on, - 236
  Uterine, effects obviated by Transfusion, - - 410
Hæmorrhoids, Aloes may be useful in, - - - - - 193
Hæmoptysis from Worms, 386
Halleri Elementa Physiologiæ, Review of, - - - 133
Hamilton's case of Lithotomy in a Female, - - - - 202
Harlan's case of Hermaphrodism in an Ape, - - - 176
Head of Humerus, Excision of, 402
Heart, wound of, not mortal for twenty days, - - - 416
Henry's Analysis of the Matter of Melanosis, - - 412
Hermaphrodism, case of, in an Ape, - - - - - 176
Hernia, a Double Inguinal, on the same side, - - 200
Hewett on Inflammation of Glands of Peyer and Brunner, 388
High Operation for Calculus, 408
Hip-Joint, Trial for Mal-practice in an injury of, 169
  Warren on Dislocation of, - 169
Holstein, Duke of, Prize Questions of, on Yellow Fever, 384
Horner's Anatomy, - - 211
Humerus, Partial Removal of, 403
  Excision of the Head of, 402
Hypochondriasis, Johnson on, 358
Hysteria, - - - - - 317
Hysteritis, - - - - 308

Icterus Infantum, colour in, not owing to Bile, - - 207
Indigestion, - - - - - 358
Infanticide, Brent's test in, 209
Infantile Convulsions, Review of North on, - - - 98

Infantile Convulsions, Parrish on, 51
Infants, Purulent Ophthalmia of, 386
Infanticide, propensity to, 415
Inflammation of Mucous Membranes in Yellow Fever, 1
    of Glands of Peyer and Brunner, Dothinentery, 388
Influence of Broussais' Doctrines, 390
Injection of Gases into Cavities of the Body, - - - - 260
Injuries from Dissection, - 405
Insufflation, Pulmonary, in Asphyxia, - - - - - 380
Intemperance, Effects of, on Society and on the Means of Prevention, - - - 267
    as a Cause of Disease, - 218
Iodine, Dr. E. Jenner Coxe, Coindet and Gairdner, on its use, - - - - - - 395
Irritation, Constitutional, Review of Travers on, - 72
    Divisions of, &c. by S. Jackson, - - 384
Italian Medical Schools, - 186

Jackson on Irritation, - - 384
Jallat's case of Diseased Pancreas, 185
Jameson on Ligatures to Arteries, - - - - - 404
James' case of Fatal Placental Presentation, - - - - 203
Jaw, Lower, Amputation of, 407
Jensoul's case of Amputation of the Lower Jaw, - - 198
Johnson on Morbid Sensibility of Stomach and Bowels, &c. 358
    on Nitrate of Silver, 360, 395
Joints, Artificial, a cure for Anchylosis, - - 279, 400

Keyser's Pills, their occasional violence explained, - 208
Key-West, Medical Topography and Endemic of, - - 213

Labarraque's Formula for preparing Muriate of Lime, 206
Lacheze's notice of an Epidemic Dysentery, - - - - 185
Labour, Premature, artificially induced, - - 408
    Inertia of the Uterus during, - - 409
Lambert on the Nitrate of Silver in Zona, - - - - - 194
Lassaigne on the Colouring Matter of Icterus Infantum, - 208
La Roche on Balsam Copaiba, 34
    his Oration, Physiology as a foundation for Pathology, 361
Larrey on Fracture of Pubis and Ischium, - - 400
    Case of Varicose Aneurism, cured, - - 401
Laryngeal Phthisis, - - 387
Leonard's Mode of Preserving Subjects, - - - - - 207
Lesieur on Endemic Medication, 189
Letter from a Physician travelling in Italy, - - - 186
Leucorrhœa, - - - - 306
Ligatures to Arteries, - 404
    on the Common Carotid, - 201, 406
    on the Subclavian Artery, - - - 406
Lisfranc on Excision of Cervix Uteri, - - - 201, 402
Lithotomy in a Female, - - 202
    above the Pubis, - 408
Liquid, black, from a Cancerous Stomach, analyzed, 207
    in the Gall Bladder after Scirrhus of the Pancreas and Jaundice, analyzed, - - 207
Liquors, Spirituous, Effects of, on Society and on the means of prevention, - - - - 267
Lizar's case of Amputation of the Lower Jaw, - - - - 199
Lobes of the Brain, laws of the formation of, - - - - 175
London University, Professorships in, - - - - - 362
Long-armed Ape, Hermaphrodism in a, - - - - - 176
Lowell vs. Faxon and Hawks, trial noticed, - - - - 169
Lower Jaw, Amputation of, 198, 199, 407
Lungs, Apoplexy of, - - - 386
    Changes in, during Respiration, - - - 410

Madar, its Properties, - - 196
Magendie on the situation of the Spinal Serosity, - - - 175

Magendie and Barbier, on the effects of the constituent parts of Opium, 400
Mal-Practice, Trial for, - - 169
Manual of Chemistry, notice of Webster's, - - - - 368
MATERIA MEDICA, - 183, 390
Matthæi on Yellow Fever, - 384
Mayo's case of Fissure of the Soft-Palate, in which the Palate-Suture was successfully performed, - - - 405
MEDICAL LITERATURE, 133, 342
Medical Society, Berkshire, Circular of, - - 364
  Philadelphia, oration before, by Dr. La Roche, - - 361
  Education, 361, 362, 364
  Graduation, necessity of uniform requisites for, in the United States, - - 364
  Profession in London and Paris, 184
Medication Endermic, - - 189
Medicines, Effect of, on Blistered Surfaces, - - - - - 189
MEDICAL JURISPRUDENCE, 209, 414
Meig's Case of Poison, by Stramonium, - - - - 33
Melancholy, dependent on Stomach, - - - - - 358
Melanosis, Chemical Nature of the matter of, - - - 412
Membranes, Inflammation of, in Croup and Angina Maligna, 181, 188
Memoir of Dr. S. P. Griffitts, by G. Emerson, M. D. - 151
Menstruation, nature of, - 297
Mercurial Sore-Mouth, Tartar-Emetic in, - 193
  Ointment, readily prepared, - 208
Mercury, Periodide of, how prepared, - - - - - 414
Methode Ectrotique, applied to Zona, - - - - - 194
Miasma, Cause of Yellow Fever, 216
MIDWIFERY, - - - 203, 408
Milan, Small Pox in, - - - 100
Milk, Collection of, in the Substance of the Mamma, - - 407
Monster, - - - - 375
Monster, Acephalus, - - 174
Morbid Anatomy, its importance, - - - - - 347
Moro, &c. on Small Pox and Varioloid in Milan, - - 180
Morris' Cases of Fever, treated on the Broussais plan, - 61
Mortality, Summary of Bills of, 417
Mucous Membranes in Yellow Fever, - - 1
  Colour of, after death, 383
Muller's Case of Effusion on Spinal Marrow, - - - 403
Muriate or Bichloride of Lime, how prepared, - - - 206
Mustard Seed, White, its Efficacy, - - - - - - 365
Murder, Propensity to, - 415

Narcotics, Effects of, obviated by Artificial Respiration, - 277
Nervous Fibres, mode of their termination, - - - 178
Nitrate of Silver in Zona, - 194
  in Indigestion, Morbid Sensibility of the Stomach and Bowels, &c. 360, 395
  and Belladonna in Epilepsy, - 394
Nitrogen Gas, Effects of, on Exposed Cavities, - - 265
Non-Mercurial Practice in Syphilis, - - - 197, 401
North on Infantile Convulsions, Review of, - - - 98

Ogilvie on Artificial Respiration in Poisoning, - - 277
Operation for Anchylosis, devised by J. Rhea Barton, - 279
Ophthalmia, { exanthematous, 180, 187
  Infantile, - 386
Opium, Poisonous Effects, obviated by Artificial Respiration, - 277
  European, does not produce Narcotism, 196, 399
Oration before the Philadelphia Medical Society, by Dr. La Roche, on Physiology, &c. 136

ORIGINAL COMMUNICATIONS, 1, 213
Oxygen Gas, Effects on Exposed Cavities, . . . 265
Paganini on Cyanogenated and Stupifying Baths, on Cyanogenated Syrup, &c. - 192
Paillard on the Preparation of Periodide of Mercury, - 414
Palate-Suture, executed by Professor Stevens, 233
executed by Mr. Mayo, - - 405
Pancreas, disease of the, - 185
Paralysis from the extraction of a tooth, - - - - - 68
Parrish on Infantile Convulsions from Spasms of the Intestines, 51
Passive Hæmorrhages, 228, 244
PATHOLOGY, - - 179, 381
founded on Physiology, - 320, 361
Pelvis, Bones of, fractured, 400
Periodide of Mercury, how prepared, - - - - 414
Peritonitis Puerperalis, - 311
Peruvian Bark in Acute Rheumatism, - - - - - 395
Pessaries, *elytroid*, used by M. Cloquett, - - - 204
Peyson's case of Epilepsy, cured by Tartar Emetic Ointment, 191
PHARMACY, - - - 205, 410
Phillips' mode of preparing Arsenic for testing, - - 210
Phrenology, progress of, - 178
Phthisis Pulmonalis, - - 386
PHYSIOLOGY, - - - 177, 376
Bostock's, notice of, 368
Broussais', review of, - - - 320
importance of, to Pathology, 320, 361
Physiological doctrines of Broussais, influence of, - - 390
Pickett's case of Paralysis from the extraction of a tooth, 58
Pin, retention of a, in the bowels, for years, - - - 183
Piorry on Spirits of Turpentine in Sciatica, - - - 394
Pitschaaft on the Softening of the Stomach, - - - 382
Placental Presentation, case of, fatal, - - - - - 203
Platinum discovered in Russia, 206
Playfair on Madar, or Asclepias Gigantea, - - - - 196
Pockel's account of the Human Fœtus, - - - - 375
Pointe on the use of Sulphate of Quinine by Frictions, - - 399
Poisoning by Arsenic, how detected, - - 210
by Arsenic or Corrosive Sublimate, how detected, - - 413
by Fox-glove, - 414
experiments on, by M. Segalas, - 376
Polypus Uterine, - - 409
Popliteal Aneurism, a case of operation in, unsuccessful, an unusual cause, - - - 179
Poppy, European, - 196, 208, 399
PRACTICE OF MEDICINE, 183, 390
Pregnancy, human, duration of, 209
in the substance of the Uterus, - 204
depletion during, - 302
Premature Labour, artificially induced, - - - 408
Preparation of Periodide of Mercury, - - - - - 414
Presentation, Placental, a fatal case of, - - 203
of the Umbilical Cord, - 409
Prevost and Dumas on the termination of the nervous fibres, 178
Prize Questions on Yellow Fever, by Duke of Holstein, 384
Caldwell's Reply to, - 172
Profession, Medical, State of, in London and Paris, - 184
Plan for improvement of, 364
Prolific Women, - - 410
Prolapsus Uteri, relieved by Elytroid Pessaries, - - - 204
Propensity to Murder, Infanticide, and Suicide, - - 415
Pubis, fracture of, - - 400
Puerperal Fever, - - - 311
Pulmonary Insufflation, as a remedy for Asphyxia, 380
Exhalation, experiments on, - 377
Purpura Hæmorrhagica, - - 258
Purulent Ophthalmia of Infants, 386

QUARTERLY SUMMARY OF MEDICAL AND SURGICAL INTELLIGENCE, - - - 174, 374
Quarterly List of American Publications, - - - 211, 41
Quebec Medical Journal, - 212
Quinine, Sulphate, administered by Frictions, - - - 399

Ramsay's case of extraction of a Calculus from a female, by dilatation, - - - - 203
Rectum, Cancer of, excised, - 201
Redness of Mucous Membranes after death, - - - - 383
Regimen, dry, effect of, in Anasarca, - - - - - 397
Removal of an Astragalus, - 200
Renaulden's case of Absence of the Uterus, - - - 376
Respiration, artificial, in cases of Poisons, - 277
    chemical changes during, - - 410
Retention of a Pin in the Bowels for years, - - - - 183
RETROSPECTIVE REVIEWS, 133, 343
Retroversion of the Uterus, 409
REVIEWS, ANALYTICAL, - 72, 293
    Travers on Constitutional Irritation, - - - - - 72
    North on Infantile Convulsions, - - - - - 98
    Halleri Elementa Physiologiæ, 133
    Dewees on Diseases of Females, - - - - - 293
    Broussais' Physiology, - 320
    Chirac on Pestilential Fevers, 343
Rheumatism, oil of turpentine in, 394
    cinchona in acute, 395
Ribs and their cartilages excised, 199
Rossi's experiments on the connexion of the Absorbing and Sanguiferous Vessels, - 375
Rudolphi on the Termination of the Nervous Fibres, 178
    on the Termination of the Fibres of the Veins, - - 178
Rupture of the Uterus, followed by Abscess, &c. at the Umbilicus, - - - - - 204

Sago, Analysis of, - - 208
Salop, Analysis of, - - - 208
Salivation, Tartar Emetic in, 193
Scarpa's case of extraordinary collection of Milk in the Mamma, - - - - 407
Sciatica, Spirits of Turpentine in, 394
Scott on Digitalis in Epilepsy, 398
Scruple doses of Calomel in Syphilis, - - - - 195
Segalas' Experiments on Poisoning, - - - - - 376
Serosity of Spinal Canal, Magendie on situation of, 175
Seventh Pair of Nerves, how connected with the Sympathetic, 175
Shaw's observations on Dissecting Wounds, - - - - 405
Sight given to a Person born Blind, - - - - - 379
Skin, Medicines absorbed by, 189
Small Pox in Milan, - - 180
Softening of Mucous Membrane of the Stomach, - - 382
Speculum, Urethro-Cystic, of M. Segalas, - - - - - 403
Spinal Canal—situation of its Serosity, - - - - - 175
Spirits of Turpentine in Rheumatism, - - - - - 394
Spirituous Liquors, Effects on Society—Means of Prevention, - - - - - 267
Spleen, Circulation of Blood in, 376
Spurred Rye—remarks of a London writer on King's cases of disease from, - - 182
Staphyloraphe, or Palate-Suture, performed by Stevens, 200
    by Mayo, 405
Stehberger's Experiments on passage of matters from the Stomach to the Urine, 378
Stevens' removal of the Os Astragalus, - 200
    operation for Fissure of the Soft Palate, 200, 233
Stomach and Bowels, Morbid Sensibility of, 358
    Erosion and Softening of, 382
Stramonium; Meigs' case of Poisoning by, - - - 33
Stupifying Baths, - - - 192
Subjects preserved by Injections of Corrosive Sublimate, 207
Subclavian Artery, Ligature on, 406
Suction of the Thorax, effect on Venous Circulation, 177
Suicide, propensity to, 415

Sulphate of Quinine, administered by Frictions, - 399
Superfœtation, - - - 376
SURGERY, - - 197, 400
Syme—Excision of the Head of the Humerus by, 402—403
Sympathetic Nerve, its connection with the Seventh Pair, 175
Syphilis, treated with scruple doses of Calomel, 195
  Non-Mercurial practice in, 197, 401

Tabes Diuretica, Venables on, Notice of - - - - - 167
Tapioca, Analysis of, - - 208
Tartar Emetic in Ptyalism - 193
  Ointment, success of, in a case of epilepsy 191
Termination of the Nervous Fibre 178
Tetanus, caused by suppressing Gonorrhœa - - - - 401
Theory of Broussais, Influence of, as deduced from Hospital Reports - - - - - 390
THERAPEUTICS, - 183, 390
Thomson on Cinchona in Acute Rheumatism - - - - 395
Thompson's Island, Medical Topography and Endemic of, 213
Thorax, Influence of its Movements on the Circulation 177
Thyroid Arteries, Superior, tied in Bronchocele - - 403
Tic Douloureux, cured by Prussic Acid - - - - - 192
Ticknor's Account of the Medical Topography and Endemic of Thompson's Island - 213
Transfusion of Blood, successful after Uterine Hæmorrhage 410
Travers on Constitutional Irritation, reviewed - - 72
Treatise on Diseases of Females, by Dewees - - - - 293
Treatment of Anchylosis, by J. R. Barton - - - - 279
Trial for Mal-Practice, noticed 169
  hingeing on the duration of Pregnancy - - 209
Tubercles Andral, on their nature - - - - - 386
Turnor and Cooke on White Mustard Seed - - - - 365
Turpentine, Oil of, in Sciatica 394

Umbilical Region, Fœtus discharged at - - - 204
  Cord, Presentation of 409
University of London, Professorships in - - - - 362
Urethro-Cystic Speculum of M. Segalas - - - 404
Urinary Consumption, Venables on - - - - 167
  Calculi, Mode of Distinguishing - 410
Urine, how soon affected by matters taken into the Stomach - - - - - 318
Uterus, Hæmorrhage from 204, 210
  Prolapsus of - - 204
  Absence of . - 376
  Anatomy of - - 376
  Amputation of Cervix of - - 201, 402
  Inertia of, during Labour, relieved by Ergot - - - 409
  Polypus of - - ib.
  Retroversion of - ib.

Vaccination of a Variety of Animals - - 179
  Gregory on - - 183
  Unnecessary Cautions as to - 183
Vaccine Matter, Preservation of, 183
Vaccino-equine, vaccino-asinine, &c. - - - - - 179
Varicose Aneurism, cured by Cold Applications - - 401
Varioloid in Milan - - 180
Veins, Fibres of, how terminate 178
Velpeau on Compression in Erysipelas - - - - 185
Venables on Diabetes, &c. noticed - - - 167
  on the Detection of Arsenic and Corrosive Sublimate, when used as Poisons, - - 413
Venous Blood, Barry on the Influence of Atmospheric Pressure on - - - 177

Wardrop on Exanthematous Ophthalmia - 180—187
  his case, in which sight was given to an adult 379
Waring on Inflammation of Mu-